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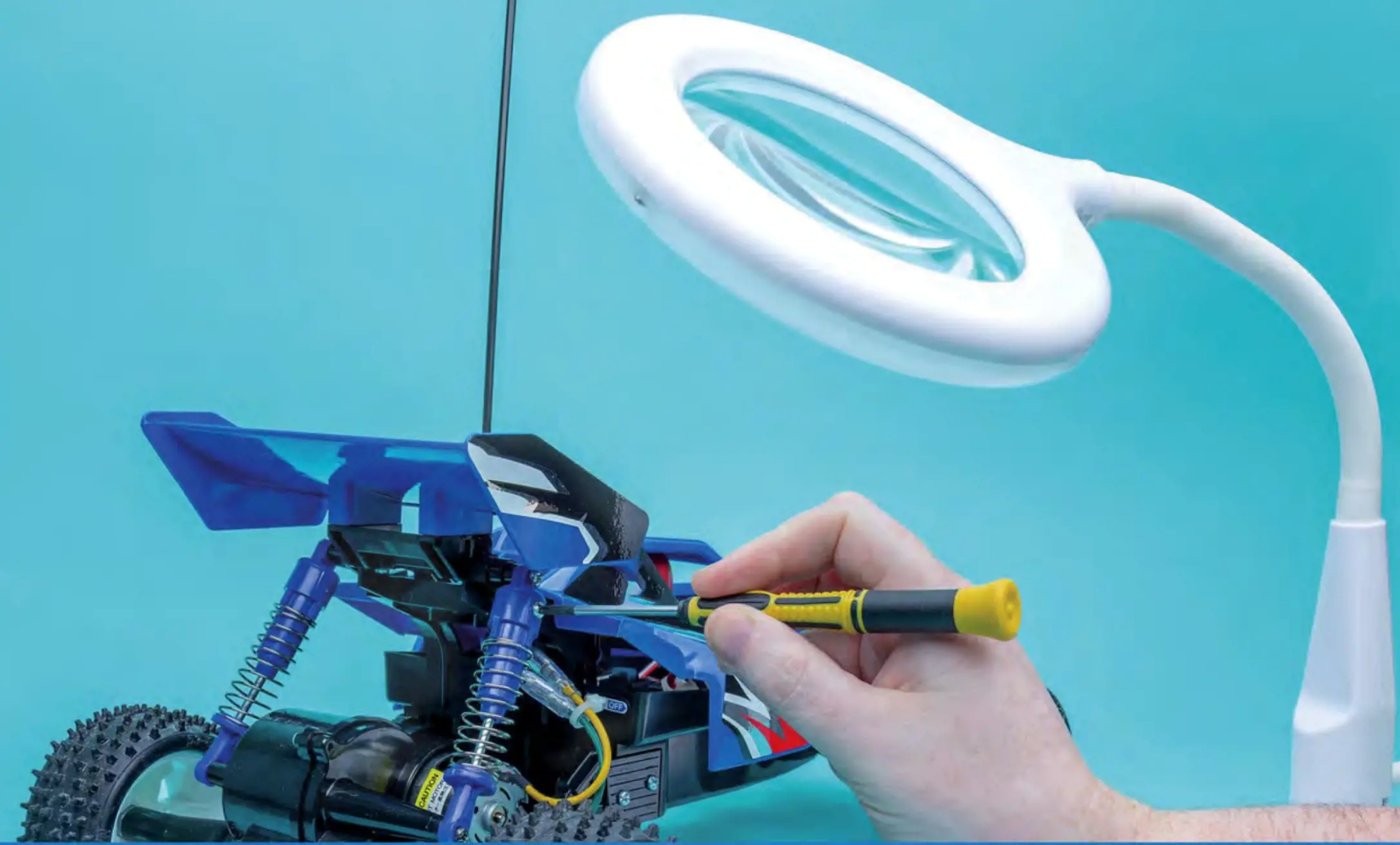

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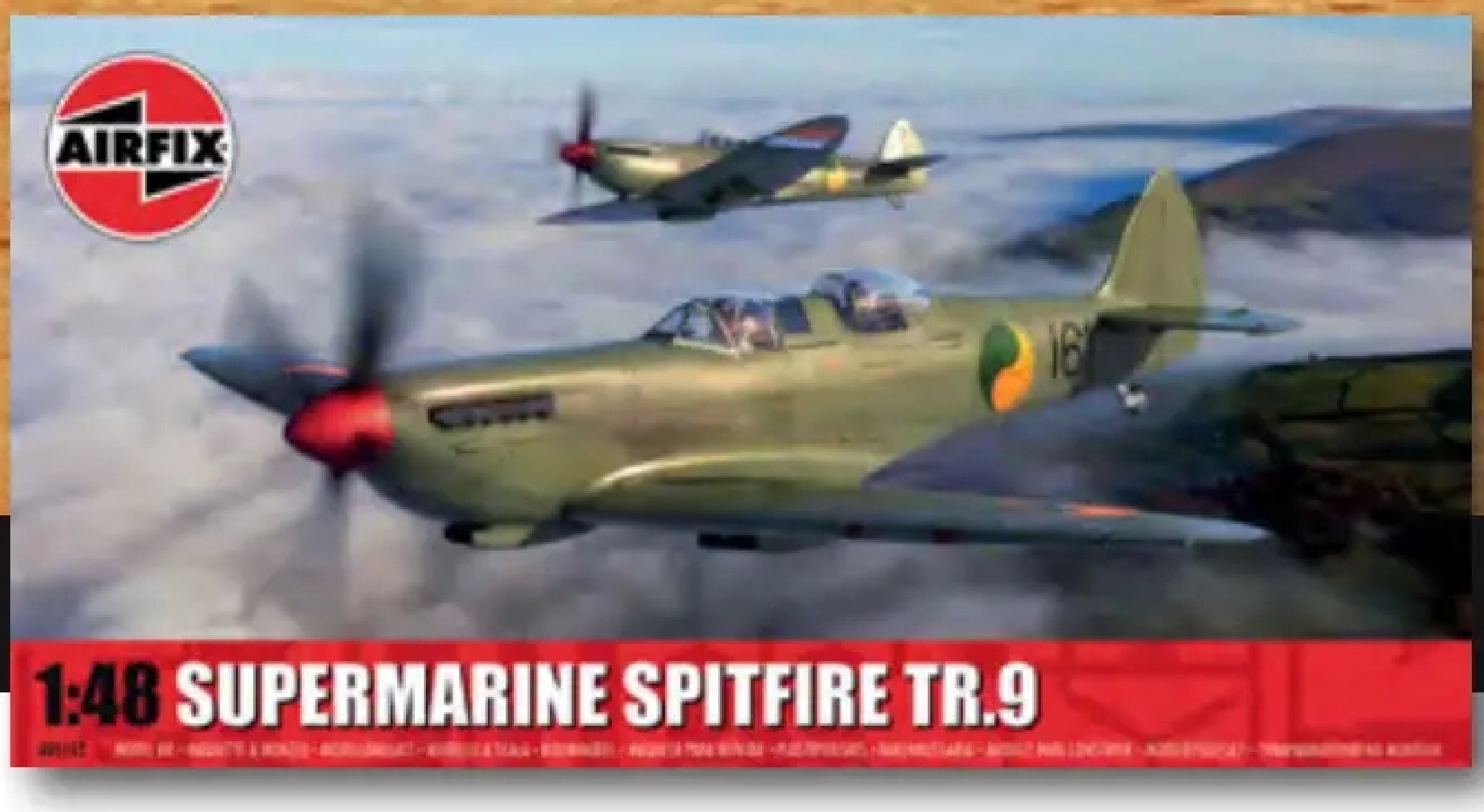
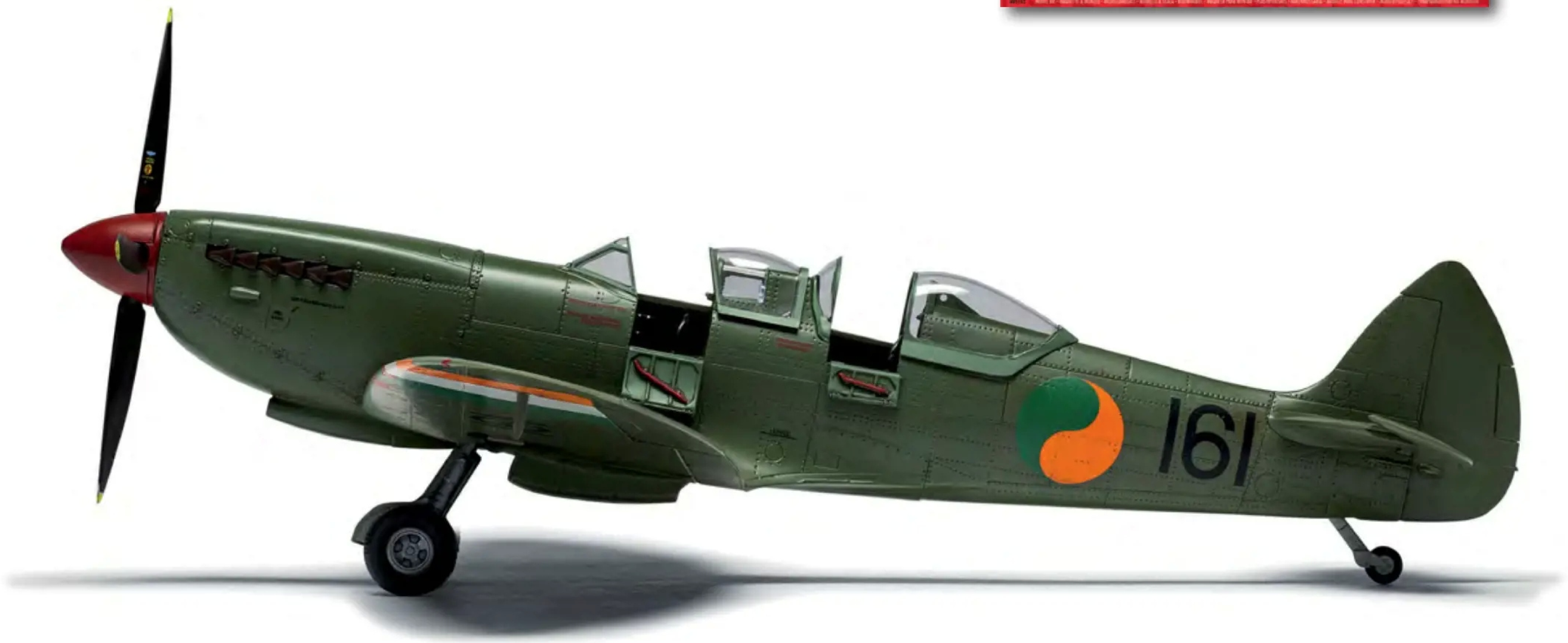
NEWSLINE

This month's round-up of all that's new in the world of aircraft modelling...





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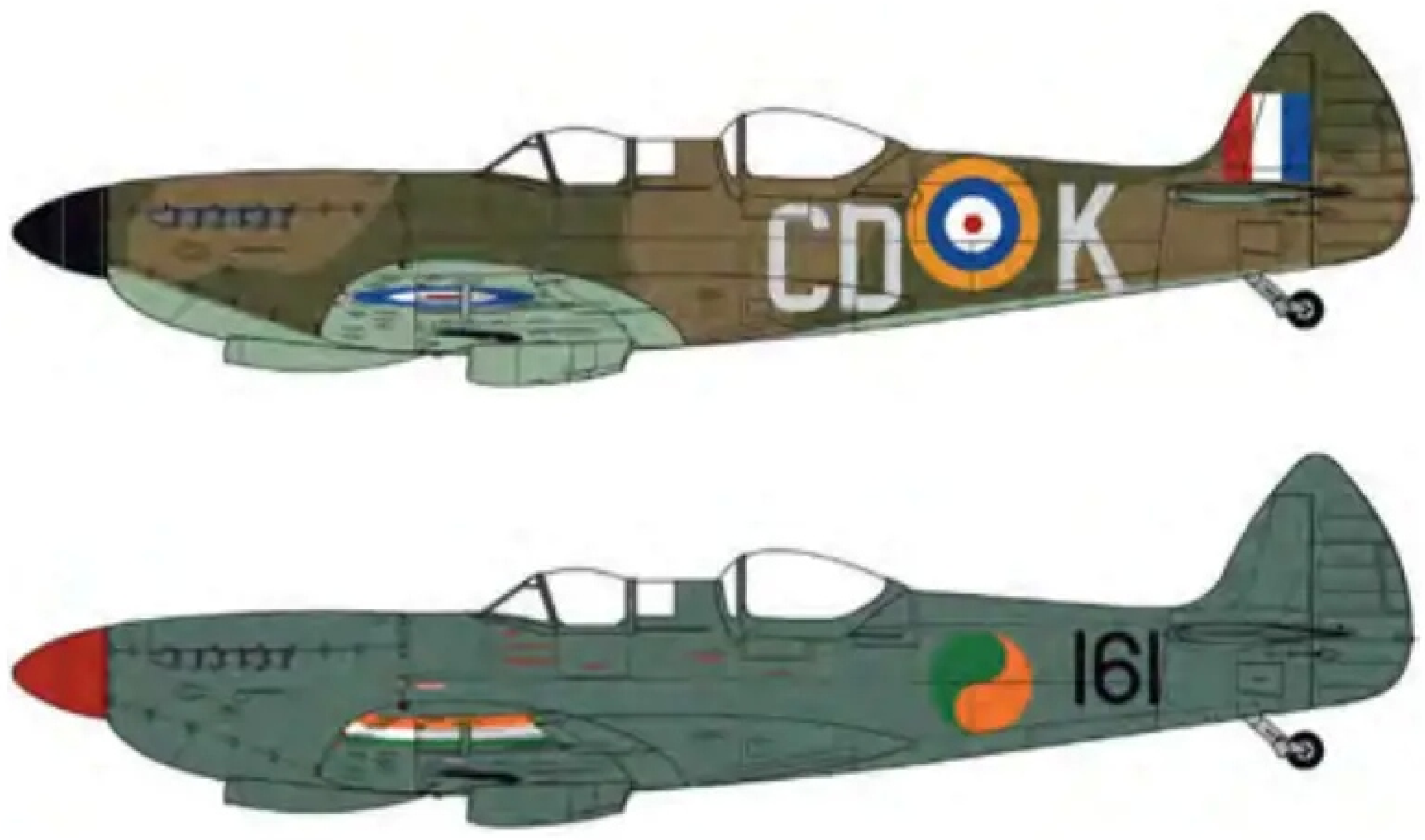
Also, despite the Spitfire being arguably the most famous fighting aeroplane in history, with over 20,000 aircraft eventually produced, no official two-seat training variants were produced during the Second World War.

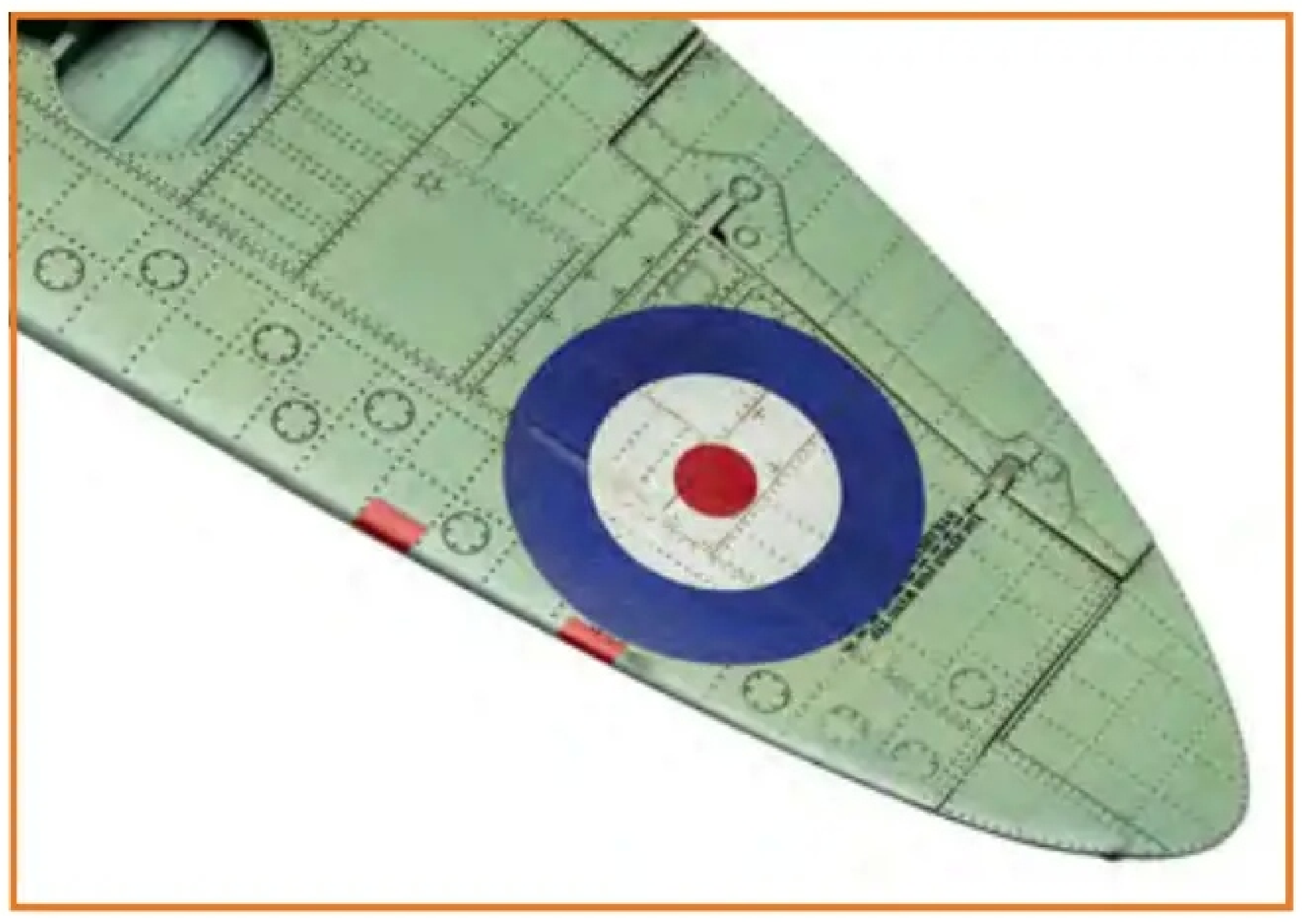
A post-war phenomenon, the current fleet of Spitfire TR.9s is helping to preserve the legacy of this magnificent aircraft.

Marking Schemes

- Scheme A: Supermarine Spitfire Tr.9, B Flight, Irish Air Corps / An tAerchór, Baldonnel Aerodrome, Dublin, Republic of Ireland/Poblacht na hÉireann, 1951.
- Scheme B: Supermarine Spitfire Tr.9, Iver, Buckinghamshire, England, 1969.

Thanks to Airfix for the images and information ***www.airfix.com***





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Jonathan Mock looks at our love/hate relationship with te

The buzzword 'AI' - Artificial Intelligence - is certainly popular these days as the technology makes more inroads into our daily lives. Anyone who uses the Google search engine will know that it now summarises its results with an AI precis. Quite how comfortable we feel about this technology depends on personal perspective. Certainly, as human beings, we've long been fascinated with the possibilities that AI can offer and - via Hollywood - the dangers too. Anyone who has ever read or seen Arthur C. Clarke's '2001: A Space Odyssey' (1968) - and it's underrated sequel '2010' (1984) - will remember the smooth talking HAL 9000 computer that is ultimately driven, by a conflict of algorithms, to commit murderous acts. Also now available as a 1:1 scale model kit from Meobius Models! (https://moebiusmodels.com/)

Similarly the brilliant 'Colossus: The Forbin Project' (1970) where America's nuclear defence system is handed over to a computer on the basis that, devoid of emotion, it cannot make mistakes. Alas, Colossus starts to think too quickly and within hours of its activation, problems occur… If you've never seen this movie, it's a terrific slice of science fiction from an era where dystopian warnings about technology abounded. Certainly right now, I'm caught in a technological vicious circle between two departments of the same governmental organisation whose computers can't agree on the documentation I keep sending - I'm beginning to know how Jonathan Pryce's character of Sam Lowry felt in Terry Gilliam's 'Brazil' (1985)…

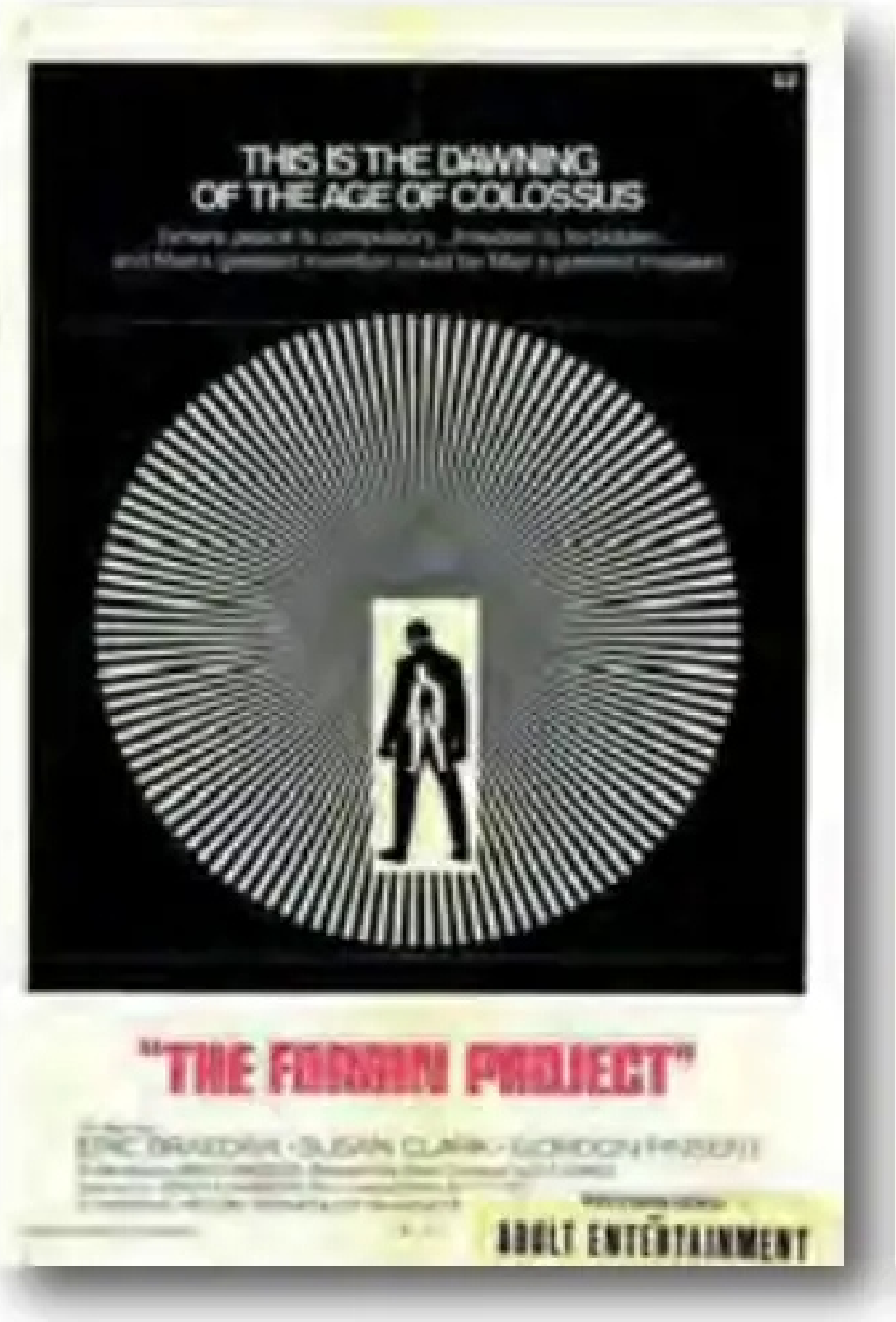
What has this got to do with scale modelling, you may well be thinking? Well, we've seen how technology has started to make it's presence felt in our hobby, least not in recent times the leaps and bounds in 3D printing, especially for home-users. In less than half a decade we've gone from machines that could only produce sketchy prints with visible layer lines to stuff that is virtually indistinguishable from injection moulded plastic (albeit made of resin). All for a couple of hundred pounds/bucks rather than the tens of thousands they used to cost. The complexity of 3D prints also continues to push the boundaries.

Now, its a subject we've touched upon in these pages before, and bears repeating again, simply because the same old misconceptions and cliches get banded around - namely that 3D printing is "killing the hobby". Quite why and how people arrive at that conclusion beggars belief, other than we've been here before: the advent of plastic kits was seen as "taking the skill" out of modelling simply because people could slap a replica together in hours rather than spending days carving and sanding a block of wood to just get to base camp. And yet here we are, in the near 70 years since the first high-impact injection moulded polystyrene kits appeared, modelling standards - both those set by manufacturers and what individuals modellers can do with them - just keep on breaking new boundaries, thanks to a combination of new talent, new ideas and - yes - new technology.

Modelling icon Tim Perry tells a tale of how his first few PP Aeroparts brass ladders were met with a mix of suspicion and resistance from some modellers, especially within the confines of the International Plastic Modellers' Society (IPMS) for whom photo-etched brass just wasn't cricket - or plastic, more to the point, the big "P" in IPMS. "Bolt on goodies" was one swipe Tim had to shoulder, ditto John Adams of Aeroclub who was also making waves with white metal engines and ejection seats. While rule makers fretted and argued over whether the society should yield to this new "fad" and these new (non-plastic) materials, its members were buying and using these products in droves, thus rather forcing the issue. As mentioned in these pages previously, the world of model railways had long adopted and been used to both photo-etched and white metal, it was us "plastic modellers" who were resistant to change. That the IPMS rewrote its rules to cater for these materials was an evolutionary leap in our hobby - the people had spoken!

Part of the problem - as with so many things in life - is that those with the loudest voices all so often have the least knowledge or experience. 3D printing is seen as an existential threat because someone forms a preconceived idea and won't budge an inch from it. Yes, 3D printing does allow more complex shapes to be moulded and sometimes in complete sections or subassemblies, thus cutting down the amount of construction that is needed. But… modeller input is still required, least not in removing the parts from the supports and cleaning them up. My good friend - and 3D modeller - Drewe Manton is often to be seen on the Interesting Modelling Co. webcast eulogising about how straightforward it is to remove parts from the supports, sometimes even just snapping them away en masse to show how easily it can be done. There is still clean up required and sometimes quite a few supports to keep an eye on and eliminate traces of, so while it's slightly different to how we cut plastic parts off of sprues, it's still requiring modelling skills - just different ones. Plus there's the whole painting/decalling/weathering step that still requires us humans.

And perhaps thats the key to why 3D printing - and indeed Tim and his brass ladders - meet obstacles in people's thinking because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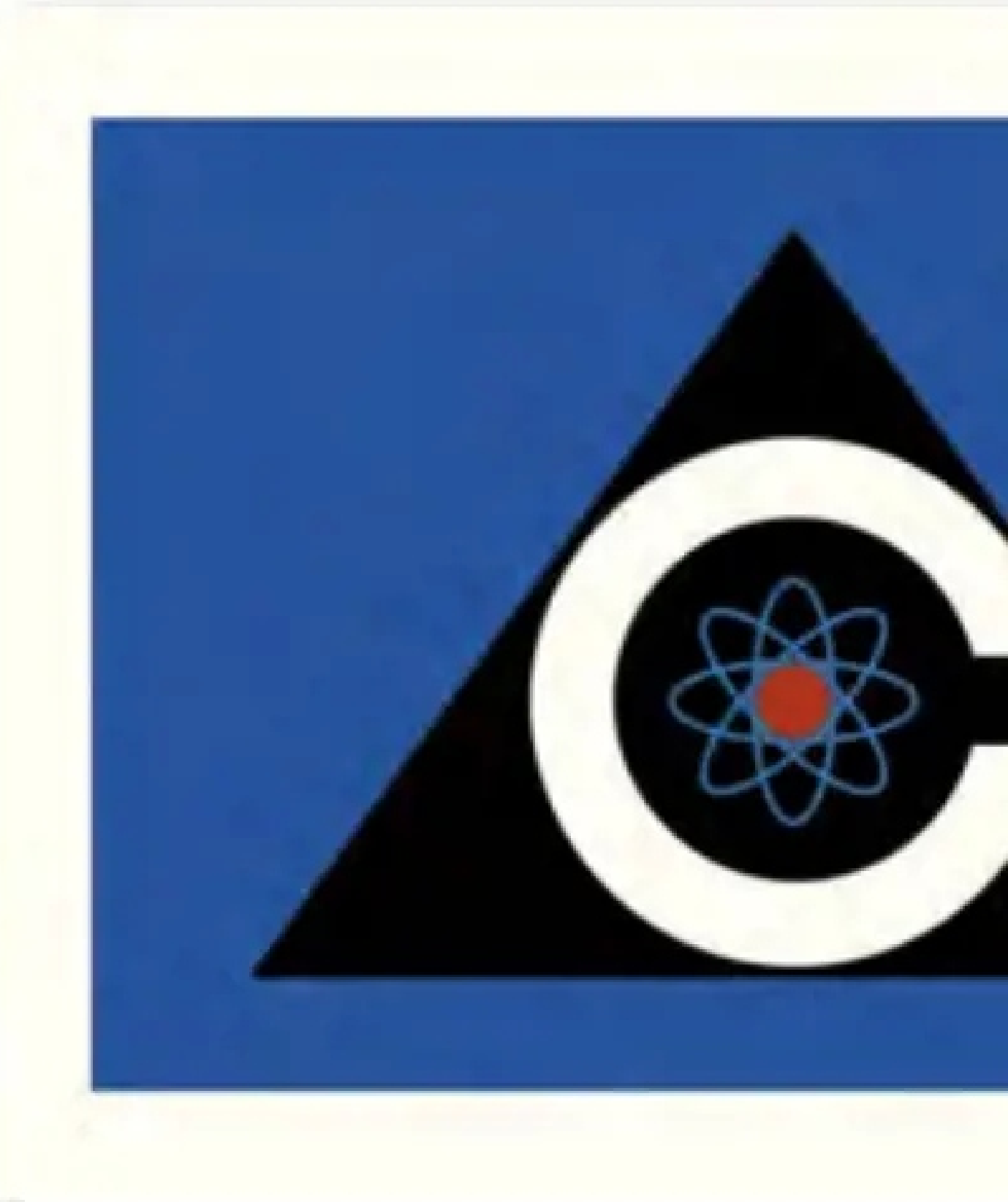

AL)
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chnology

they're so fixed in their way of doing things that anything new or different feels like a threat to their cosy little world.

That said, I do rather feel for traditional sculptors because 3D printing has rather begun to bypass that skill. My visit to ModelU in Bristol last year (www.modelu3d.co.uk) was a revelation to see how someone dressed in period costume could be scanned and a workable model be ready in minutes. It obviously still requires work to fine tune that data and turn it into something that can be printed, least not when it comes to switching scales. But there's little doubt in my mind that 3D modelling - be it scanning or using digital "sculpts" - is the way forward when it comes to figures, be it whether full poses are captured or partial details (faces, hands) to be used to create a figure from (virtual) scratch.

Similarly, the use of LIDAR (Light Detection and Ranging) to capture basic shapes by model manufacturers leads to weird ideas that it's a case of "scan-subject and press mould". Quite how that works is never explained, other than kits can be magically "scaled down" and it's all button pushing. If you've ever seen how LIDAR scanning actually works and the effort needed to create the CAD on top of it, it really isn't as straightforward as GoFs (Guys on Forums) would have you believe.

When the first digital box art started to appear, one very irate GoF decried it as effectively "button pushing" and "stealing" work from real artists. Again, when pressed how this was, they couldn't answer and, to use an Americanism, 'doubled-down' thinking that more of their opinions was, to use a Britishism, 'just the ticket'. As someone who has worked alongside one of the leading digital artists out there, the ridiculously talented Adam Tooby (https://adamtooby.artstation.com/), I've seen the level of skill and ingenuity that goes into his work, his ability and eye for weathering is staggering (I'm so glad he doesn't make actual models!). It's different skills to those of the late great Roy Cross and Roy Huxley, but skill it still is. And my rejoinder to anyone who thinks it isn't is always to show us how it's done. If it's really all that easy and just button pushing, show us your work…

There's no doubt that the shadow of AI hangs over the artistic community like some kind of ghastly spectre and AI's ability to create artworks and styles is both fascinating and terrifying. I think we've all seen examples online that appear to be the work of human hands but are entirely the (virtual) imagination of an algorithm. When it comes to some details, AI seems to struggle with hands and fingers, resulting in some comical results. But… as those dystopian sci-fi movies showed us, AI can learn very quickly, and I'm sure it won't be long until AI can render hands perfectly - probably in the time it's taken me to write this article!

Talking of which, if there's one thing surely AI can't replace it's us evolved apes who like sticking plastic toys together and writing about them? I'm sure someone will try it, just to see if it is possible to get AI to write an article, generate images and get it into print. Nervous editors will no doubt be on their guard at material that turns up.

Imagine that though, a model magazine entirely created using AI written text and generated images trying to pass itself off as the real thing.

What could possibly go worng..? ■

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(Photo Archive No. 38)

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This month we can introduce readers to another new addition to the rapidly expanding Wingleader Photo Archive series of great books of modeller's reference material. This new one is a follow-on from the first book on the Halifax and it looks like there is at least one more to follow and that will take a look at the Hercules-engined versions. Peter Allam is again the author and has written several previous Photo Archives on bombers.

It is such a shame that there is not an original Halifax still in existence. We can still see the next best thing, a complete Halifax but made up of lumps and spares that have been built into a near as we will get to the real thing. It is in one of the hangars at the Yorkshire Air Museum at Elvington, south of York. It is a very impressive aircraft, surprisingly large as can be seen in photos in this book with ground and air crew standing beneath parked examples.

This Halifax book guides us through the later Merlin engined types. Noticeable features are a variety of nose designs, the shape of the tail fins change to the rectangular style. Other changes involve the turrets, a variety of propellers, some three bladed and some four bladed, even mixed on the same aircraft, various aerials, different exhaust designs, etc. One of the less visible changes during this time was the changes to the various types of Merlin engine.

Peter Allam guides us through these changes in the usual way by placing arrows and reference letters on the photos and then describing them in the extensive captions. Some of the photos are translated into colour profiles with captions that describe various features on the aircraft. One spectacular set of photos show some (very) low flybys flying over the afore-mentioned Elvington airfield. Some of the photos show flying Halifaxes and there is a good selection of ground shots. One or two shots show Halifaxes that have been through exciting times, having been in contact with enemy fighters or falling object. A Halifax is shown on its belly having landed back at Holme on Spalding Moor's grass with its inner port engine missing. During an attack the engine was set of fire, destroying itself and falling off the aircraft taking with it some vital systems.

During this time described in the Halifax's career covered in this book, there were constant modifications carried out to improve performance such as modified and more efficient air intakes under the propellers. A small change that reduced drag could make the difference between making it home and falling in the sea.

Towards the back of the book, we see examples of Coastal Command Halifaxes is Coastal Command colours. Some of the photos show how the paintwork weathered. During the D-Day invasion of Northern Europe many Halifaxes were used in glider-towing operations and obviously decorated with the D-Day stripes. Many of the aircraft were fitted with up-rated Merlin engines and four-bladed propellers to improve power for towing the heavy gliders over to France. A couple of pages at the end of this book look at the modifications that enabled a handful of aircraft to carry odd loads. One change enabled a Jeep and trailer to be carried in the bomb bay. Others could carry heavy spare Bristol Hercules and Pratt & Whitney Double Wasp engines. Unbelievable a complete Spitfire nose could be accommodated in one of these modified Halifax's bomb bays.

This book is another great addition to Wingleader's Photo Archive series. Anyone with a kit in mind would find this a very useful book to have on their bench during the build and painting. These books would not only appeal to modellers but to a general WWII aviation enthusiast.

Thanks once again to Wing Leader for giving us a look at this new Photo Archive book. Have a look at the list of great books previously published in this growing set. See wingleader.co.uk for ordering or specialist aviation book traders such as Avid Reader/ Bookworld Wholesale for availability (bookworldws.co.uk). ■

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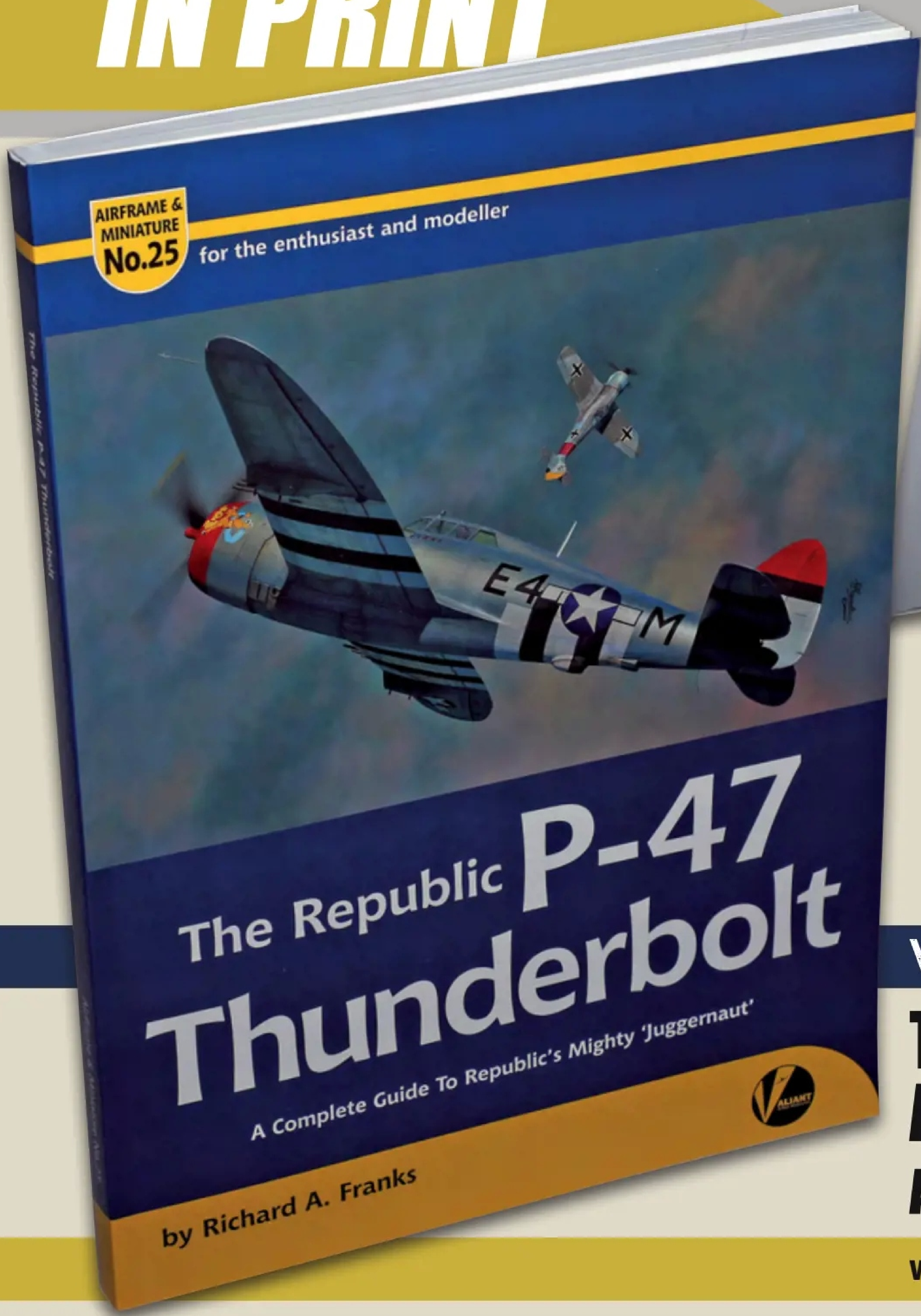
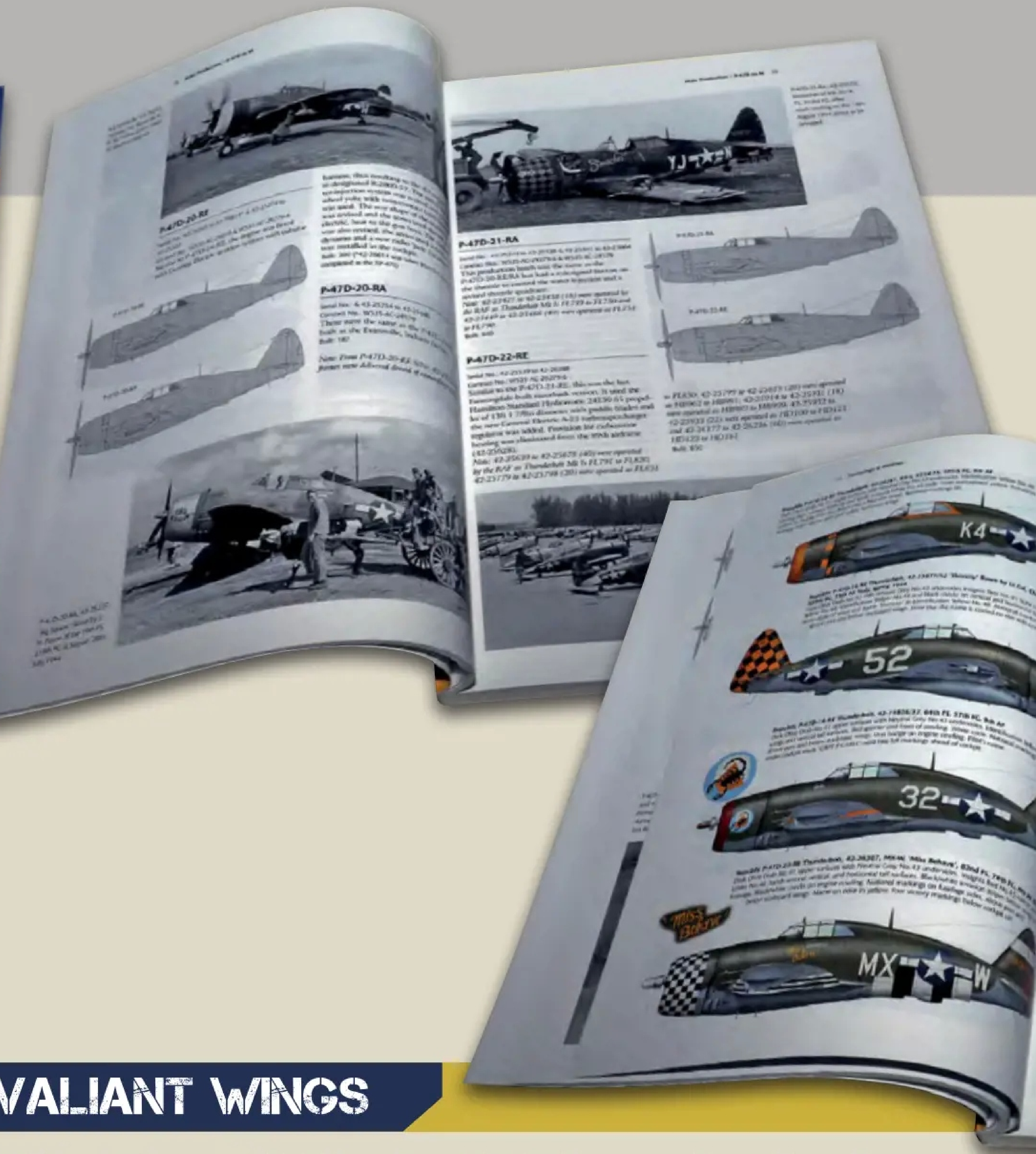

AIRFRAME & MINIATURE No.25
for the enthusiast and modeller
The Republic P-47 Thunderbolt
A Complete Guide To Republic's Mighty 'Juggernaut'
by Richard A. Franks



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- **Published by Valiant Wings Publishing Ltd**
- **Guide Price £29.95**
- **ISBN 978-1-912932-39-9**
- **288pp softback, 297 x 210mm**

There can be no doubt that the P-47 Thunderbolt is a 'beast'. It Is huge but surprisingly nimble in flight and makes exciting viewing at air shows. Thunderbolts served widely during WWII, the Americans being the largest user by far, flying Thunderbolts everywhere where the USAAF was involved in the fighting. The pilots loved them. In a book I read recently on the air war in the South Pacific against the Japanese, pilots were very disappointed when P-38 Lightnings began to replace their P-47s. Although the P-47 had just the one engine, it was very reliable and could take more punishment than the P-38 and still get you home. A huge and rugged Pratt & Whitney radial engine on the nose was known to have a cylinder or two shot away and still keep running to get you home. Thunderbolts flying in the South Pacific did so in very primitive conditions, frequently moving from island to island as the Japanese were retreating. On some occasions USAAF personnel became involved in close fighting with Japanese troops trying to regain territory lost.

This book is a hefty volume dedicated to the history of the Thunderbolt and to take a close look at the aircraft from the modelling point of view. The opening chapter describes the gestation of the P-47 and the aircraft types that would result in the P-47 Thunderbolt as we know it. It was not until March 1942 that the first handful of aircraft were going through the testing and development process, only about four months after Pearl Harbor forced the US government to join the war. The P-47B and P-47C were built in small numbers but it was the P-47D series that would be produced in the largest numbers with over 12,000 making up over 80% of the total of all versions produced. This first chapter describes the process and is illustrated with dozens of photos of the aircraft in flight as well as on the ground with many in the working environment with aircraft being serviced on airfields. This chapter goes on to mention the units within the USAAF that operated the Thunderbolt including the Air National Guard that would fly Thunderbolts at the end of the war, before they passed into retirement. A list of foreign users concludes this chapter with a surprisingly long list of operators. Those looking for something different by way of markings will find some unusual ones.

Chapter 2 shows the evolution of the P-47 from the early prototypes to the final version, the P-47N-25-RE. Line diagrams and notes show how the family developed to the end of production in October 1945, ending a run of 15,683 complete aircraft and enough spares to have produced a further 3,000.

Next, Camouflage & Markings will be of great interest to all modellers and occupies almost fifty pages of the book. As well as dozens of Richard Caruana's superb colour profiles, there is a large number of black and white photos with the occasional one in colour. On the opening page we see the beginning of a page and a half of original paint application notes. Here we see what colours are used in various areas of the aircraft and even the thinners that should be used when applying the paint. Most of the plane was to be given a light coat of zinc primer followed by a lacquer coat of Dark Olive Drab on the upper surfaces. Neutral Grey was to be applied to the lower surfaces so that when viewed from a certain angle from above it could not be seen. The Neutral Grey and Olive Drab were to be sprayed with a slight overlap.

Details describing the application of the national markings and stencilling follow the general camouflage paintwork. We are also told at which point P-47s would leave

ghty ‘Juggernaut’

production plants in natural metal. Having left the factory in the standard colour, units would then set about personalising their aircraft with checker patterns, etc and in many cases, add nose art. At the end of this chapter we see colour profiles from the many foreign operators. The RAF flew Thunderbolts from home and overseas bases. Some of the RAF’s P-47s were given something near to the standard camouflage pattern of the time with grey and green on the upper surfaces.

Chapter 5 moves on to modelling topics with lists of Thunderbolt kits and a brief description of what comes in the boxes. There is a useful list of model sizes in scales 1:144 to 1:32. They go from what will sit in the palm of your hand to ones that will fill most of the car’s boot. Kit sizes go all the way up to 1:24.

Chapter 6 - Building a Selection consists of full build and reviews of several P-47 kits. The kits featured this time are Tamiya’s 1:72 P-47D Bubbletop, an Academy 1:72 P-47D Razorback, Dora Wings’ 1:48 P-47C, Miniart’s 1:48 P-47D and Trumpeter’s 1:32 P-47D Razorback. All builds describe the process in notes and stage photos with an honest verdict at the end of each build.

Chapter 7 - Building a Collection covers just over forty pages using diagrams and notes to describe how the P-47 developed from the original AP-10 XP-47 (Short Span) prototype to the P-72 that didn’t actually progress from advanced plans to production in 1944. An order for 100 was cancelled before any were built.

Chapter 8 - In Detail is more than just a walk around. This chapter covers more than 60 pages and looks around the outside, the inside and under the skin of the P-47. It is broken down into sections, beginning with the cockpit interior, covering 10 pages with photos and diagrams showing all aspects of the instruments and seats. Many of the photos show numbered items that are cross referred to the captions explaining the uses of the handles, clocks, etc. Diagrams come from old pilot’s notes and maintenance manuals. Those looking to super-detail their cockpit interiors need look no further. Next, there is a section on the canopy, taking a close-up look at the cockpit canopy components on the razorbacks and bubble canopies. A couple of pages even show the locally modified cockpits to take a passenger seat behind the pilot. Every area of the Thunderbolt is covered in this way, photos and diagrams around the undercarriage area will be particularly useful. At the end of the chapter, we are shown Thunderbolt armament with descriptions of the machine gun installations and the bombs and rockets hung under the wings. Long range fuel tanks of several regular types were routinely carried and even ex-Luftwaffe fuel tanks modified to fit the P-47s get a mention. Radios, radar sets and camera installations round off the chapter.

Appendix – The last few pages provide lists of Thunderbolt kits, decals, accessories and books. The list of kits runs to four pages of three text columns in a small font. Few aircraft have attracted so much attention from kit manufacturers and in all scales from1:144 to 1:24. Tipped inside the back cover is an eight-page fold-out set of 1:48 plans that will be useful to those looking to have all the panels in the correct places.

This is yet another superb profile from Richard Franks and the rest of the team at Valiant Wings. Anyone with a Thunderbolt kit to build or are simply fascinated by this impressive WWII fighter/bomber will get hours of pleasure from going through this book. Congratulations on producing an amazing book on an impressive aircraft.

Many thanks to Valiant Wings for supplying their latest title for review. See their website: valiant-wings.co.uk for ordering or see book traders such as Avid Reader / Bookworld Wholesale who provide a good mail order service or can be seen at various model shows. Hannants also stock Valiant Wings titles. ■

Alan Firbank

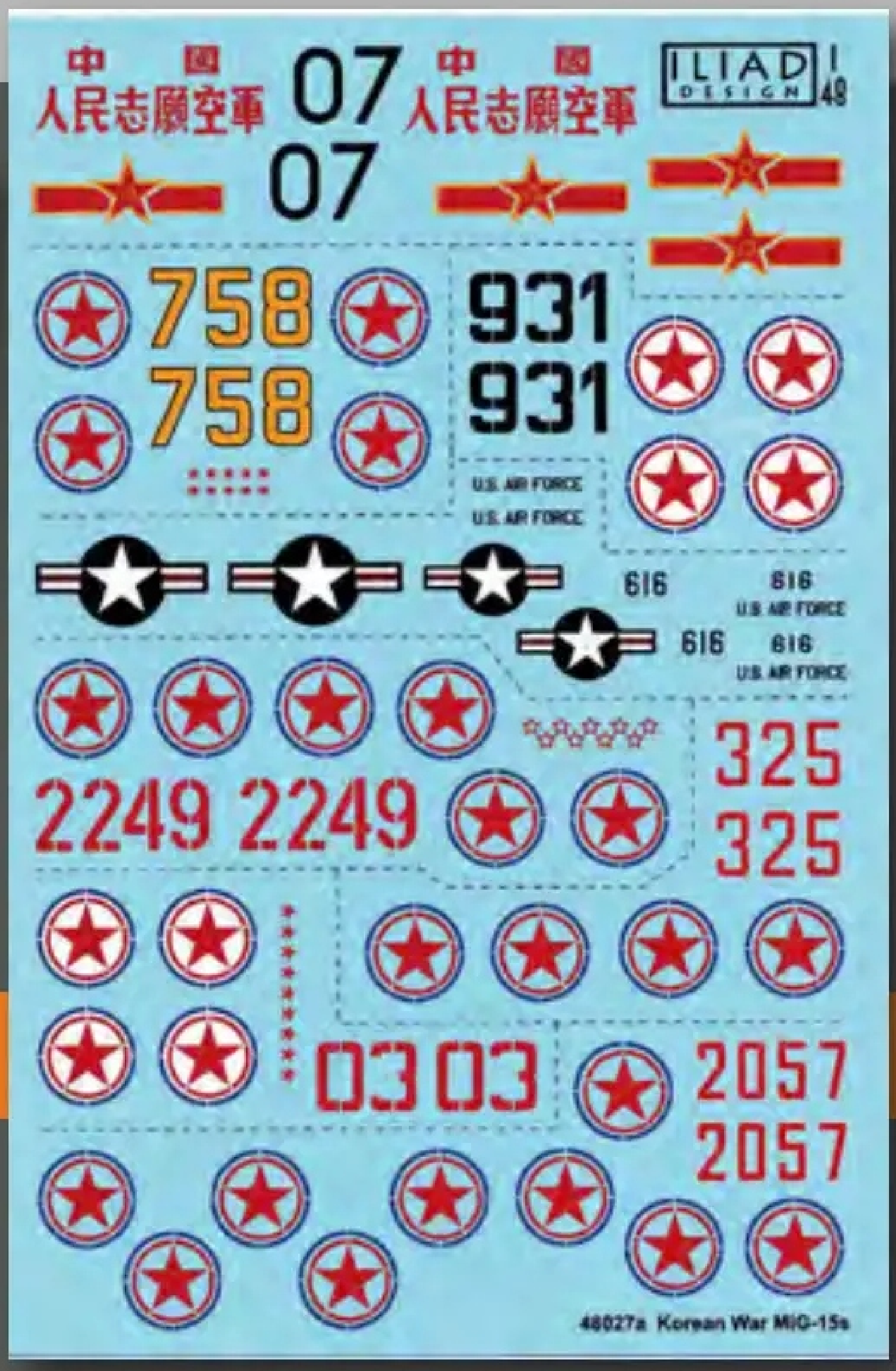
TRANSFER LIST

ILIAD DESIGN

This month we have two more sets of decals from Iliad in Canada. This month's sheets provide markings for Korean War MiG-15s and 1942 RAF fighters. Plenty of kits to suit these two sets of markings.

www.iliad-design.com

Korean War MiG-15s
ILIAD DESIGN



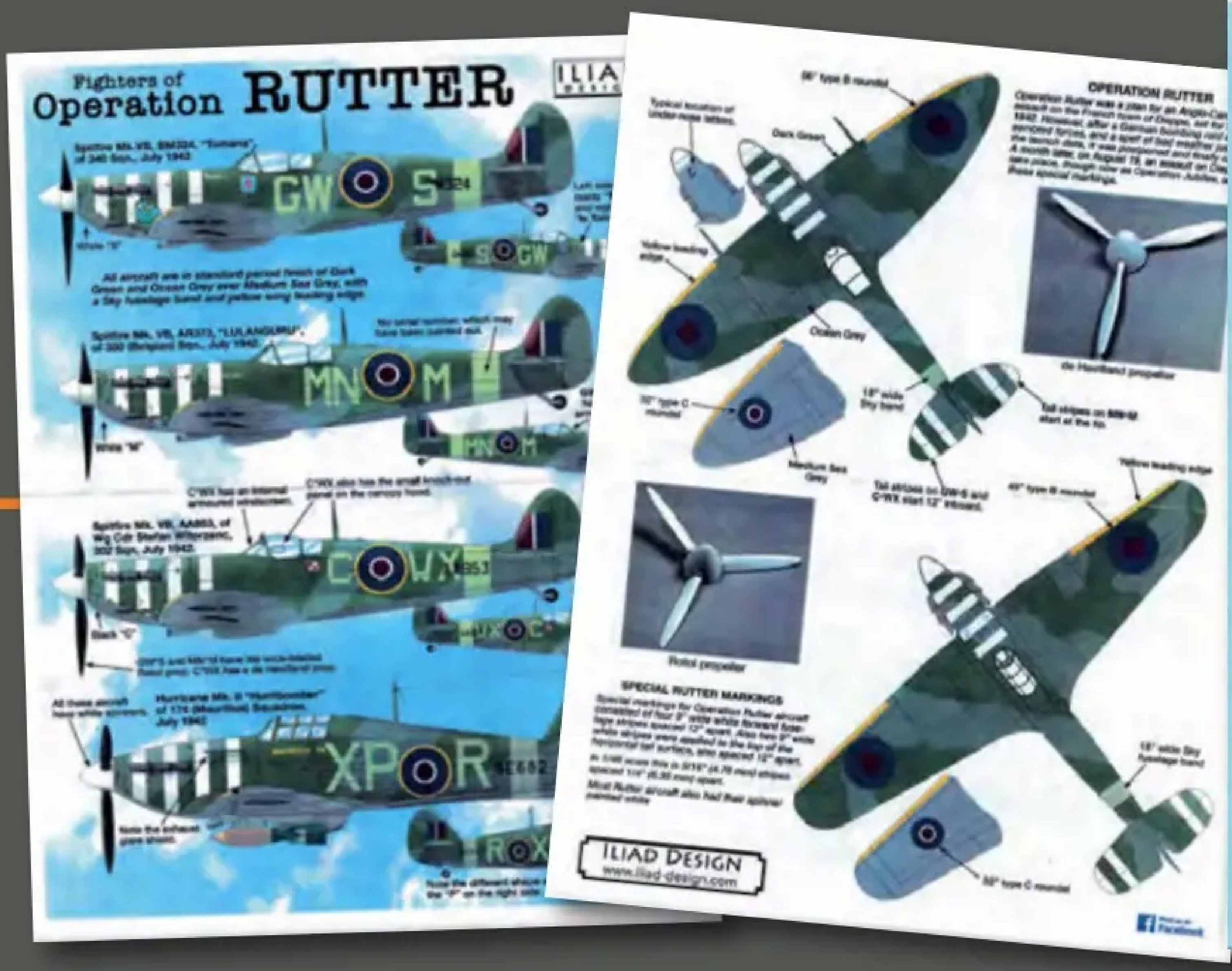
Korean War MiG-15s

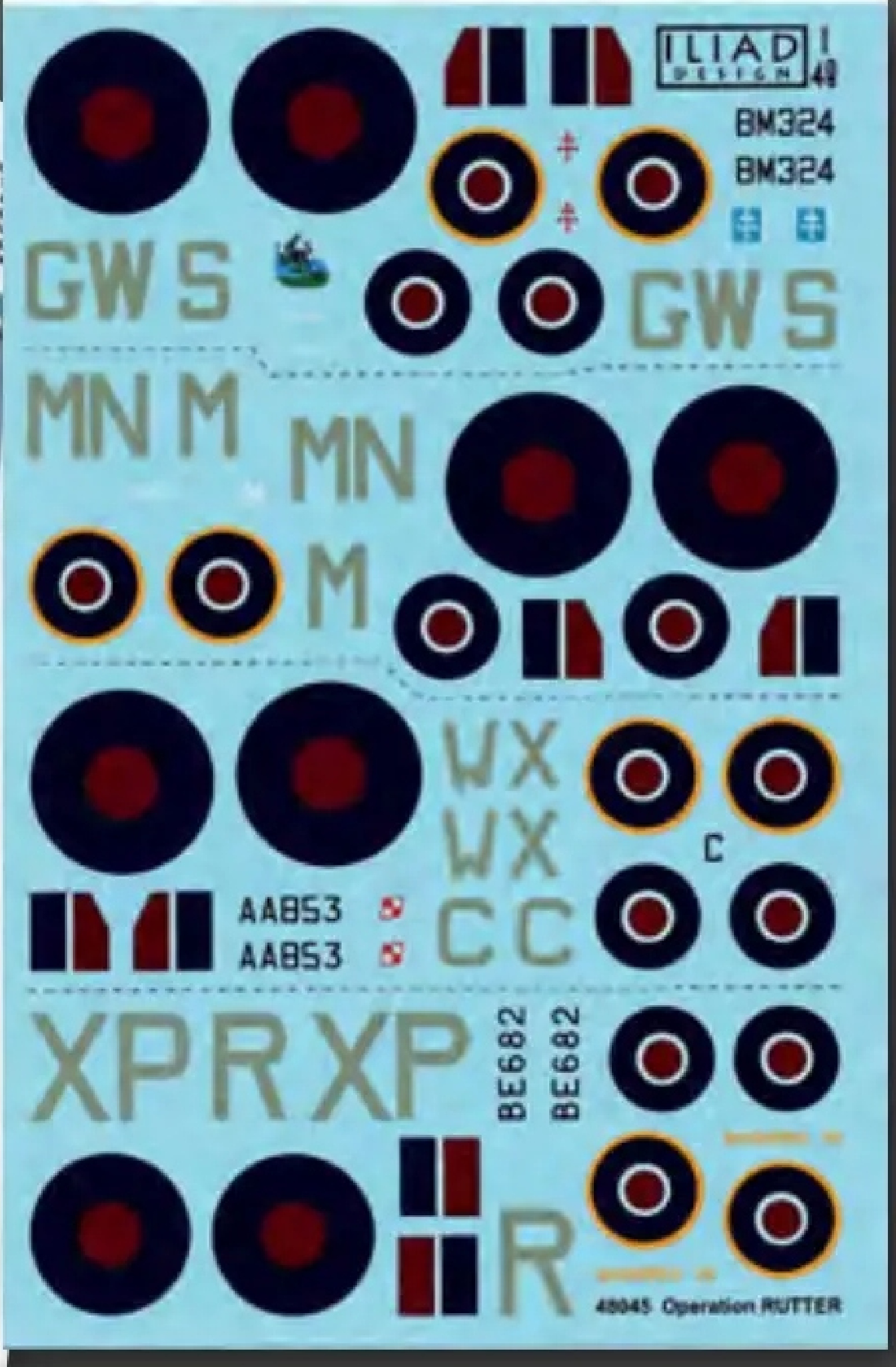
- **1:48 scale**
- **Item No. 48027a**

This sheet is a reprint from earlier Iliad times but with an additional scheme and amended information that has emerged following the first release.

- 01 A Soviet-built MiG-15 '07' in Chinese Air Force markings in an overall natural metal scheme. Chinese pilots were flying in support of the North Korean communist forces.
- 02 This MiG-15 '931' was in North Korean markings but flown by a Soviet pilot. This is a great scheme with the upper surfaces made up of stripes of tan, medium green and dark green with light greyish-blue on the undersides.
- 03 MiG-15 '758' in North Korean markings on an overall natural metal finish.
- 04 MiG-15 '2057' in North Korean markings on a natural metal finish.
- 05 MiG-15 '616' in US Air Force markings on a natural metal finish.
- 06 MiG-15 '03' in North Korean markings. This MiG was in a camouflaged finish of medium brown and dark green on the upper surfaces and light greyish-blue on the under surfaces.
- 07 MiG-15 '2249' in North Korean markings flown by a Chinese Air Force pilot. This aircraft was in an overall natural metal finish with a red band on the top of the tail fin.
- 08 MiG-15 '325' in North Korean markings in an overall natural metal finish with red paintwork around the nose.

The instructions show some photos of North Korean MiGs and guides showing the camouflage patterns. ■





Fighters of Operation RUTTER

- **Item No. 48045**
- **1:48 scale**

Despite reading many, many books and various publications on WWII, I had never come across Operation Rutter, today is yet another school day. Operation Rutter was the forerunner of the famous (for all the wrong reasons) Dieppe raid on August 19th in 1942. Operation Rutter was to have taken place on 7th July 1942 but was called-off when the assembled Anglo-Canadian force was bombed by the Luftwaffe and the poor weather was against the landing.

This set of decals provides three sets of decals for Spitfires and one set for a Hurricane. The RAF fighters that were to support the earlier Dieppe landings were given special identification markings in the form of four white bands around the nose and two on the tail planes.

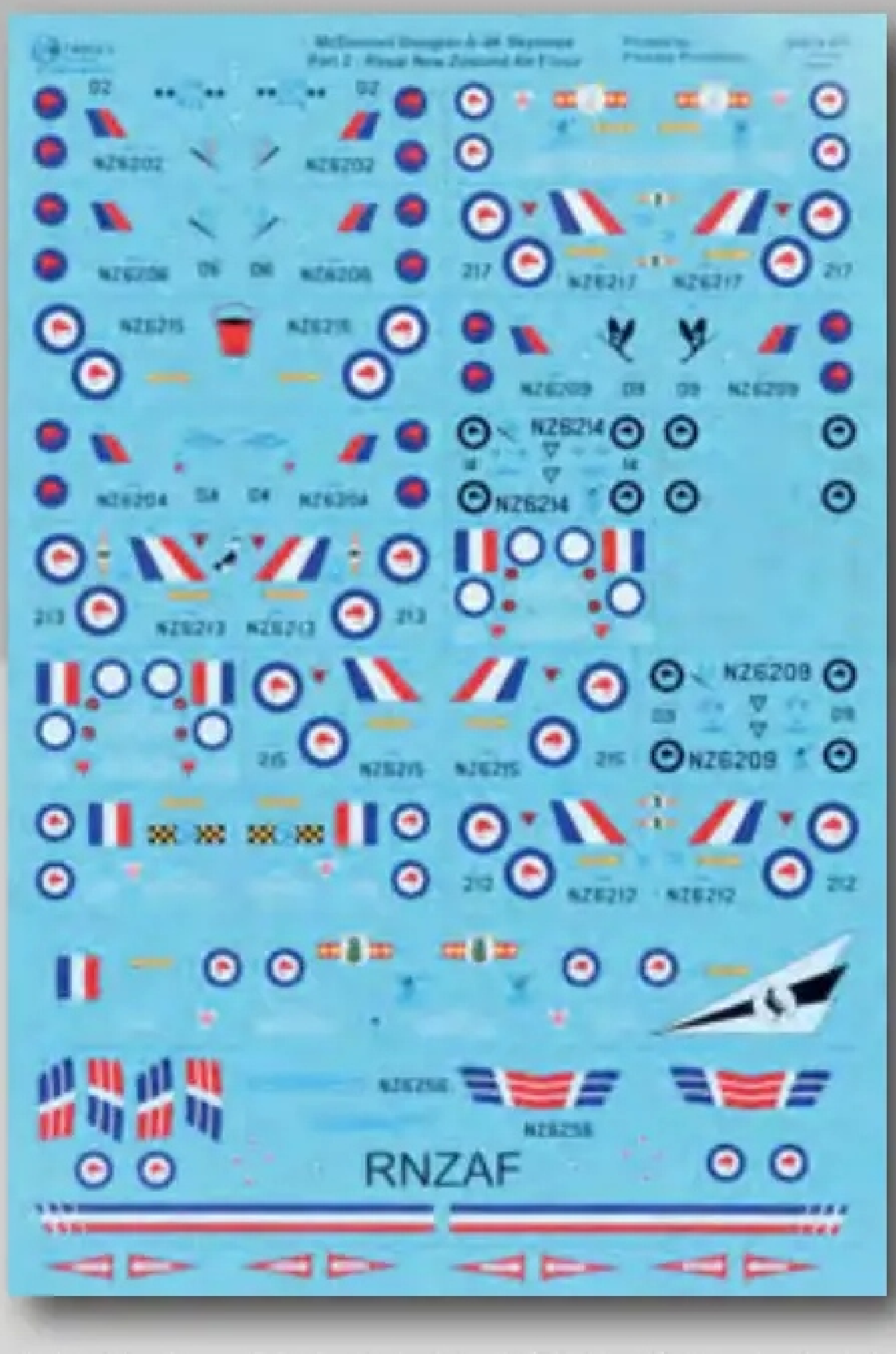
Here are the options:

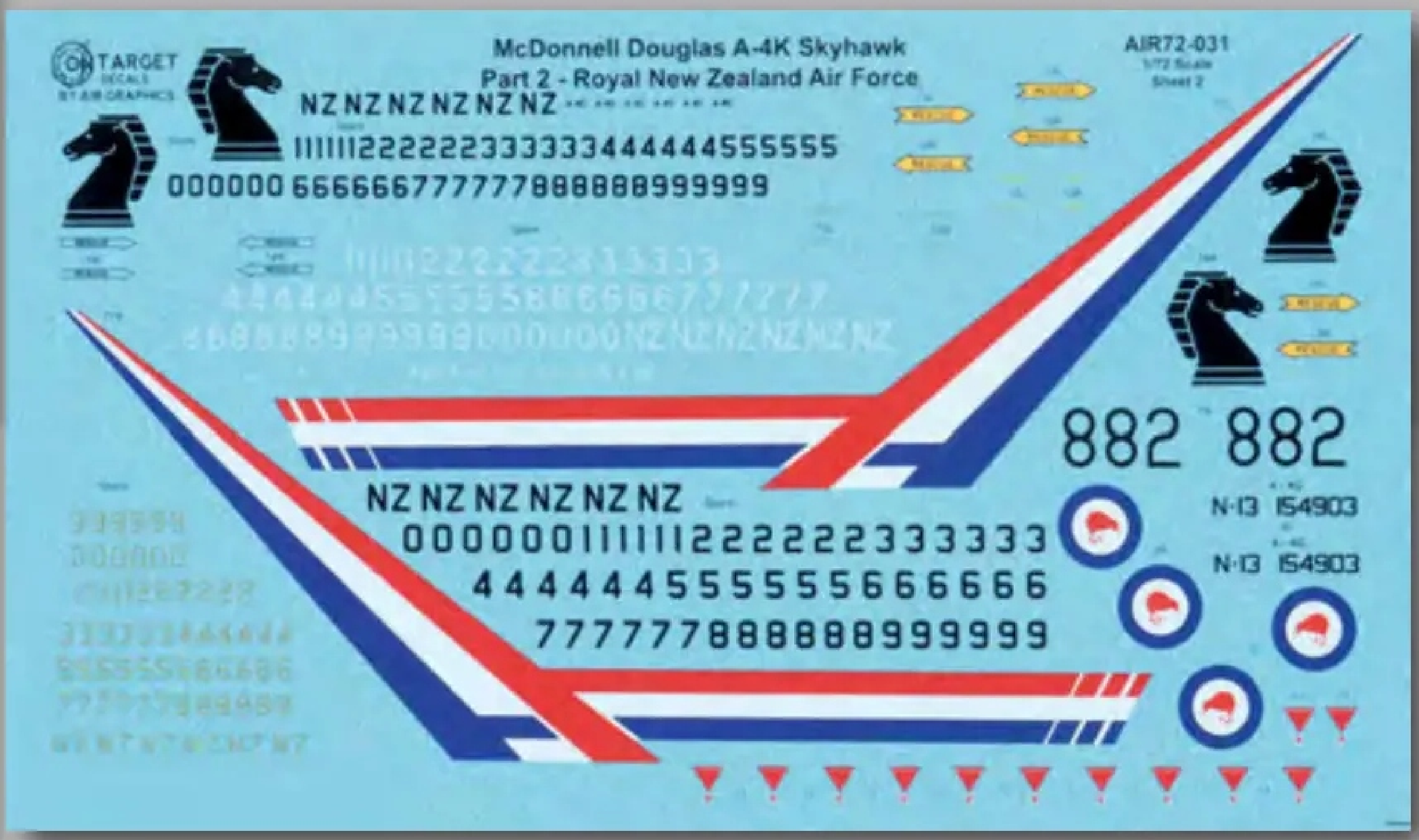
- 01 Spitfire Mk.VB, BM324 'Tomana' GW-S with No. 340 Squadron. This Spitfire was in the standard scheme of a pattern of Dark Green and Ocean Grey on the upper surfaces with Medium Grey undersides and the White bands described above.
- 02 Spitfire Mk.VB, AR373 'Lulanguru' MN-M with No. 350 (Belgian) Squadron in the markings described above.
- 03 Spitfire Mk.VB, AA853 C-WX with No. 302 Squadron in the markings described above.
- 04 Hurricane Mk II BS682 'Hurribomber' XP-R with No. 174 (Mauritius) Squadron in the same scheme as described with 01.

The decals are well presented with clear demarcations between the schemes. National markings are provided with all four schemes. ■

Alan Firbank

Thanks to Iliad Design for supplying their latest sheets for review, See ***Iliad-design.com*** for ordering direct or Hannants are a UK supplier of Iliad sheets.


McDonnell Douglas A-4K Skyhawk
Part 2 - Royal New Zealand Air Force
RNZAF


ON TARGET DECALS BY AIR GRAPHICS
McDonnell Douglas A-4K Skyhawk
Part 2 - Royal New Zealand Air Force
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1/72 Scale
Sheet 2
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AIR-GRAPHIC MODELS

McDonnell Douglas A-4 Skyhawk Part 2 Royal New Zealand Air Force On-Target Special Decals

- **Item No. AIR72-031**
- **1:72 scale**

A mouthful of a title for a specialist sheet for one of the world's best known and popular small fighter-bomber aeroplanes. It comes in the familiar clear zip-lock bag and consists of one large sheet and a small additional one. Also included, and very necessary, is a sixteen-page full colour A5 instruction booklet that covers the range of the possible applications of the markings. This includes a number of colour images of the examples on the sheets.

The markings cover the period from the 1970s green/tan over pale grey, a late 1980 one in bare metal, through the Australian-purchased examples in Aircraft Grey/Light Admiralty Grey mid-180s period, then the two greens/dark grey overall schemes of the late 80s up to the overall dark green in the late 90s-2001 period.

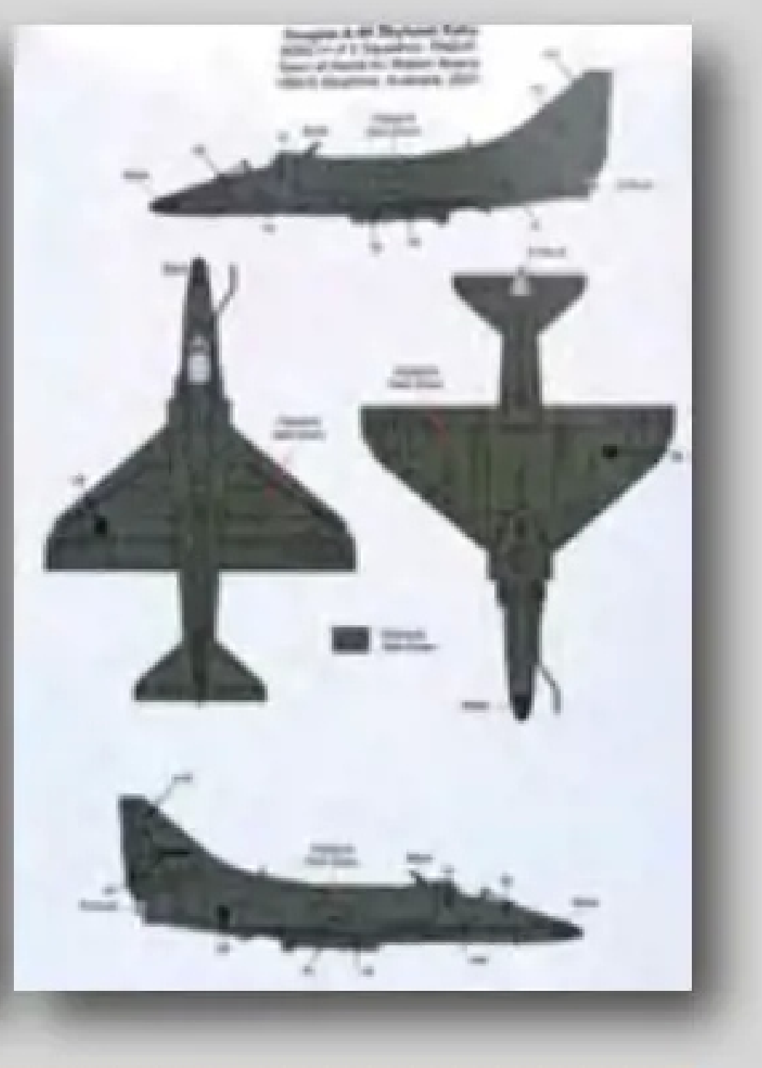
There is also the delightful all-gold display example with red and white stripes.

Also included is a paint guide listing the required colours by name and FS numbers produced by Humbrol, Xtracolour, Hataka, Modelmaster, Gunz Sangyo, Tamiya, Lifecolor, SMS and MRP. It's a shame that Vallejo has missed out. Only the first two are enamels, the rest being acrylics. Some of the aircraft are A4Gs but a few are the different A4K Kahu examples which have a different fin, among other features, so some conversion work will be required although there is a promo for a resin conversion set, CS-31 towards the rear of the booklet.

I'm not going to list all seventeen examples, Suffice to say that you can build the whole gamut of schemes used by the RNZAF, from the high-vis Kiwi red and white roundel period, the red/blue kiwis, through to the low-vis black markings used at the end of its service. Details can be gleaned from the Hannants site. As we have come to expect, the decals are beautifully printed in gloss on a mid-blue backing sheet with zero carrier film to worry about. Colour density is great and register perfect - the squadron badges are works of art. There are no stencils provided as the modeller can get those from any of the available kits and there are plenty out there to use. Each aeroplane is treated to a full page four-view set of colour drawings showing schemes and decal placement. The vast number of spare serials indicate that you could probably build every one of the RNZAF examples if you have the reference material.

These are a very interesting range of schemes and markings and if this is your interest area and your stash allows for the number of choices, then the sheet comes highly recommended. A collection of Skyhawks does not take up much room on the shelf! ■

Graham Carter



Thanks to Air-Graphic Models for the sample https://air-graphics.uk/

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NEW PARTS
03768 Hawker Sea Hurricane Mk.IIC, 1:32
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BATTLE OF BRITAIN SET
03766 Battle of Britain 85th Anniversary Set, 1:72
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03774 Messerschmitt P.1099A - P-Series, 1:72
LEVEL 4
03772 Boeing™ 737-800™ "Turkish Airlines", 1:144
LEVEL 4
03773 Airbus A350-900 "Turkish Airlines", 1:144
Available from all good model stockists and online from
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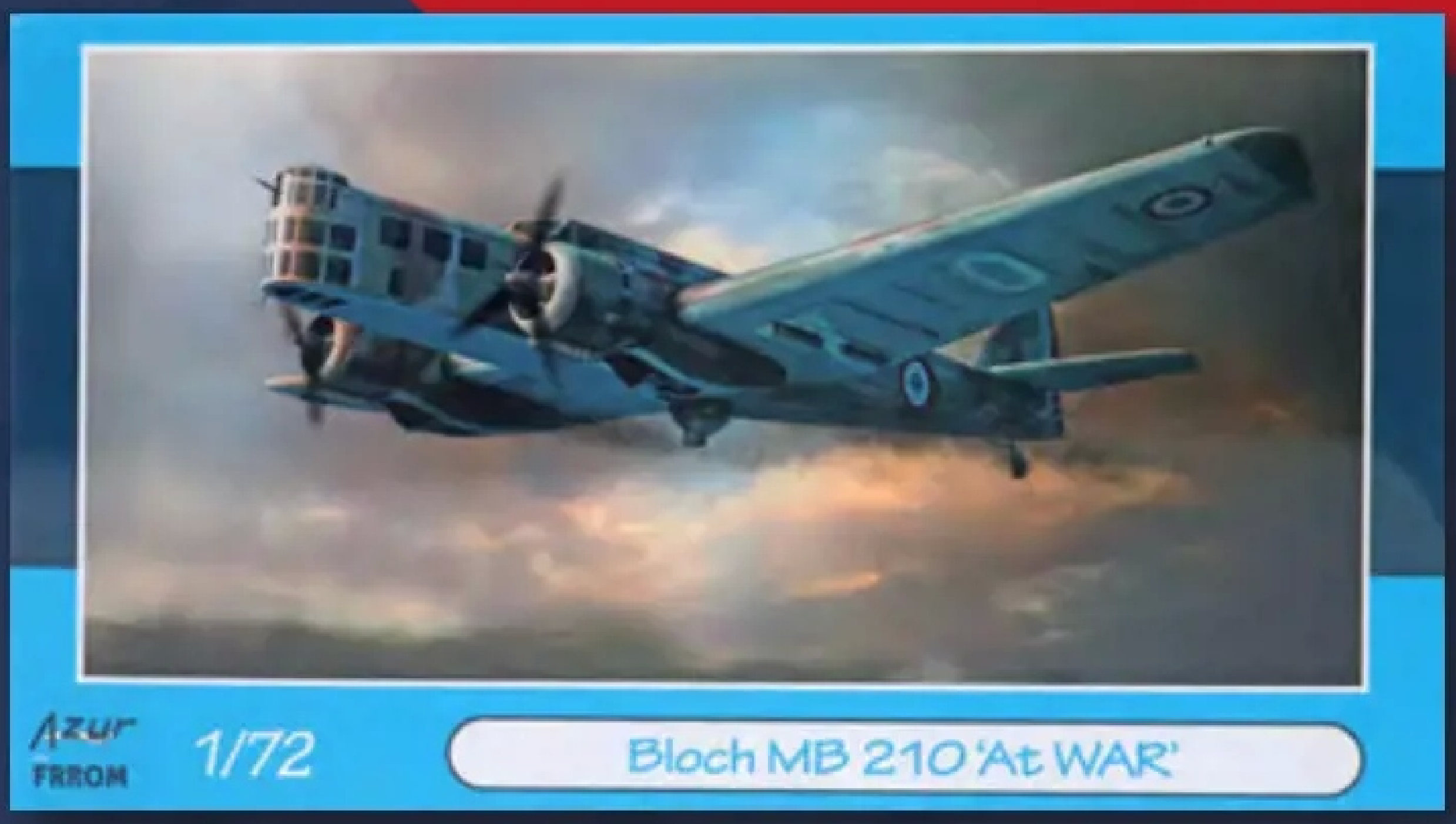
PREVIEW

1:72



BLOCH REDUX

KIT PREVIEW Azur FRROM 1:72 Bloch MB 210 'At War' • Kit No. FR0056

The Editor checks out Azur FRROM's latest in their 1:72 Bloch MB 210" family.

This the second iteration of this kit and is another of those mid-1930s French airplanes that only a mother would love, the Marcel Bloch 210 was a development of a floatplane design but fitted with retractable undercarriage. It bore a more-than passing resemblance to its predecessor, the MB200, which has been released by KP and Smer a couple of decades ago.

The four-man bomber was the most prolific bomber in the Armee de l'Air when WWII broke out but was seriously obsolescent and did not last long, although the invading Germans did second around 17 of them for training and communications.

The aircraft was predictably released by Heller (1967), and re-released by Smer in 1990. I have this kit and it shows its age and the simplicity of those early Heller moulds, but builds on Britmodeller and Marquette72 indicate that a pretty reasonable replica could be produced given sufficient time and skill. This is now no longer a chore as Azur Frrom has produced a technologically superior kit in all respects, relegating the older ones to the collector or plastic masochist's market. With only minor modifications from the original kit reviewed here on 29 January 2025 much of the following is pretty much a repeat.

Arriving in the usual strong top-opening affair with a rather atmospheric illustration on the top, inside is the familiar resealable clear bag containing five dark grey sprues, a clear one, a small photo-etched fret and a 16-page folded colour A5 instruction booklet.

A small 3D printed fin extension piece (used on one of the decal choices) is hidden among the sprues in its own zip-lock bag.

The parts are well-moulded with great surface detail, highlighting the metal strengthening bars(?) on the fuselage and wings, a feature of these 1930s French metal multi-engined aircraft.

On the parts maps only six parts are indicated as not being required as they were part of the earlier variant.

The transparencies are clear and packed in their own bag to prevent scratching.

Gates are small and should be easy to clean up but take care with the ones on the wings as they do touch on the leading edges. None of the small surface swirls in the plastic evident in the earlier release are evident in this kit.

The interior and engine are fully detailed and will bear careful painting as the former can be seen through the extensive windows (or should I say fenestration) in the fuselage.

There will be some careful masking of windows as these are attached from the inside. The fuselage exterior structure is made up of six pieces to allow for the square shape to be accurately replicated. This will also require care as there are no locating pins/holes but there are narrow moulded ledges to help alignment.

The instructions are in a 16-page A5 booklet and are clearly drawn, with colours called out in each step. Photo-etch is used for some very fine detailing of seat bases and exterior doo-dads.

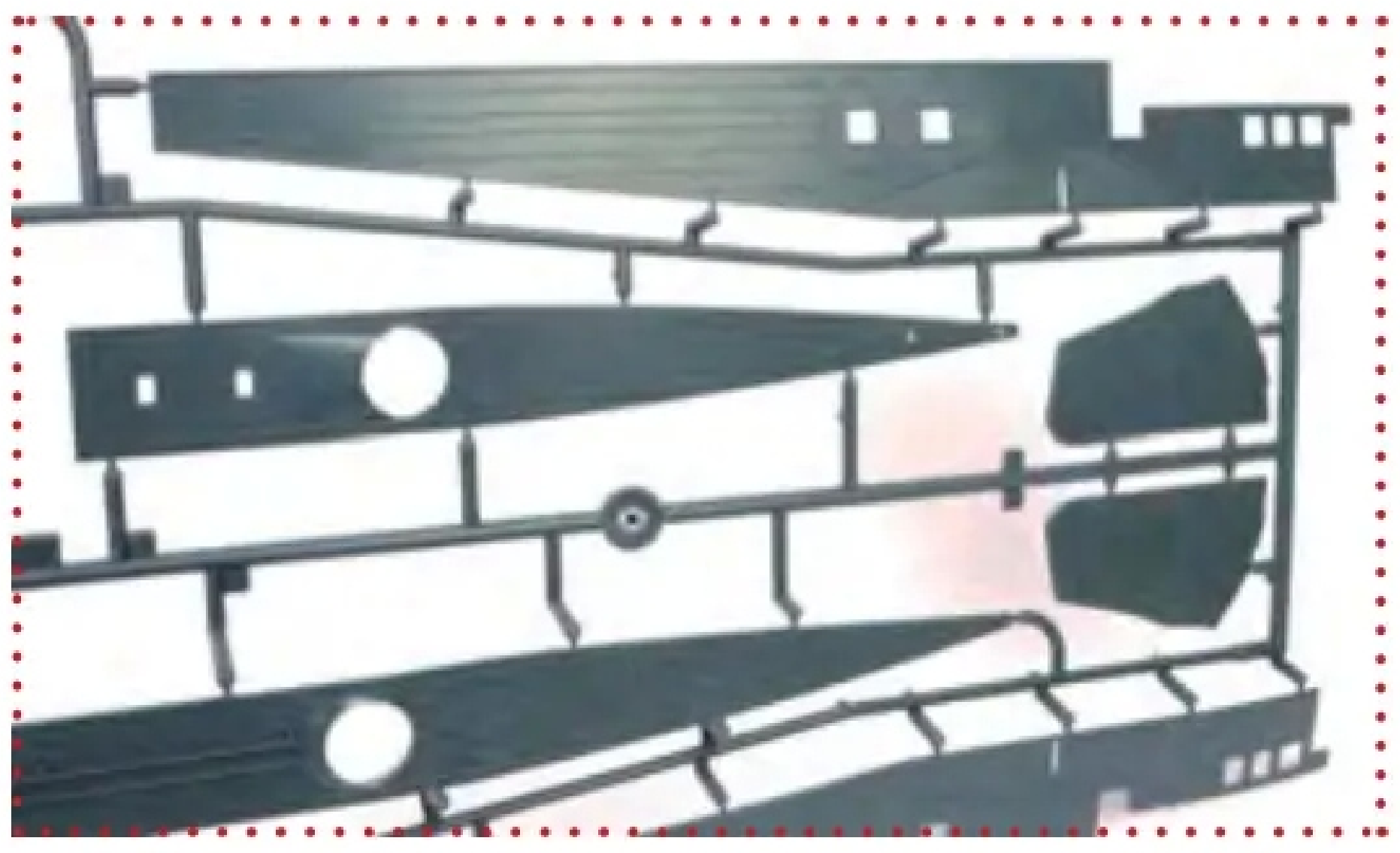
Markings are provided for three aircraft, two in overall French dark green with aluminium forward nacelles and cowlings and one in the four-colour scheme that some of us find so attractive. One has typically colourful unit markings and all sport the large white matricules - serials - under the wings.

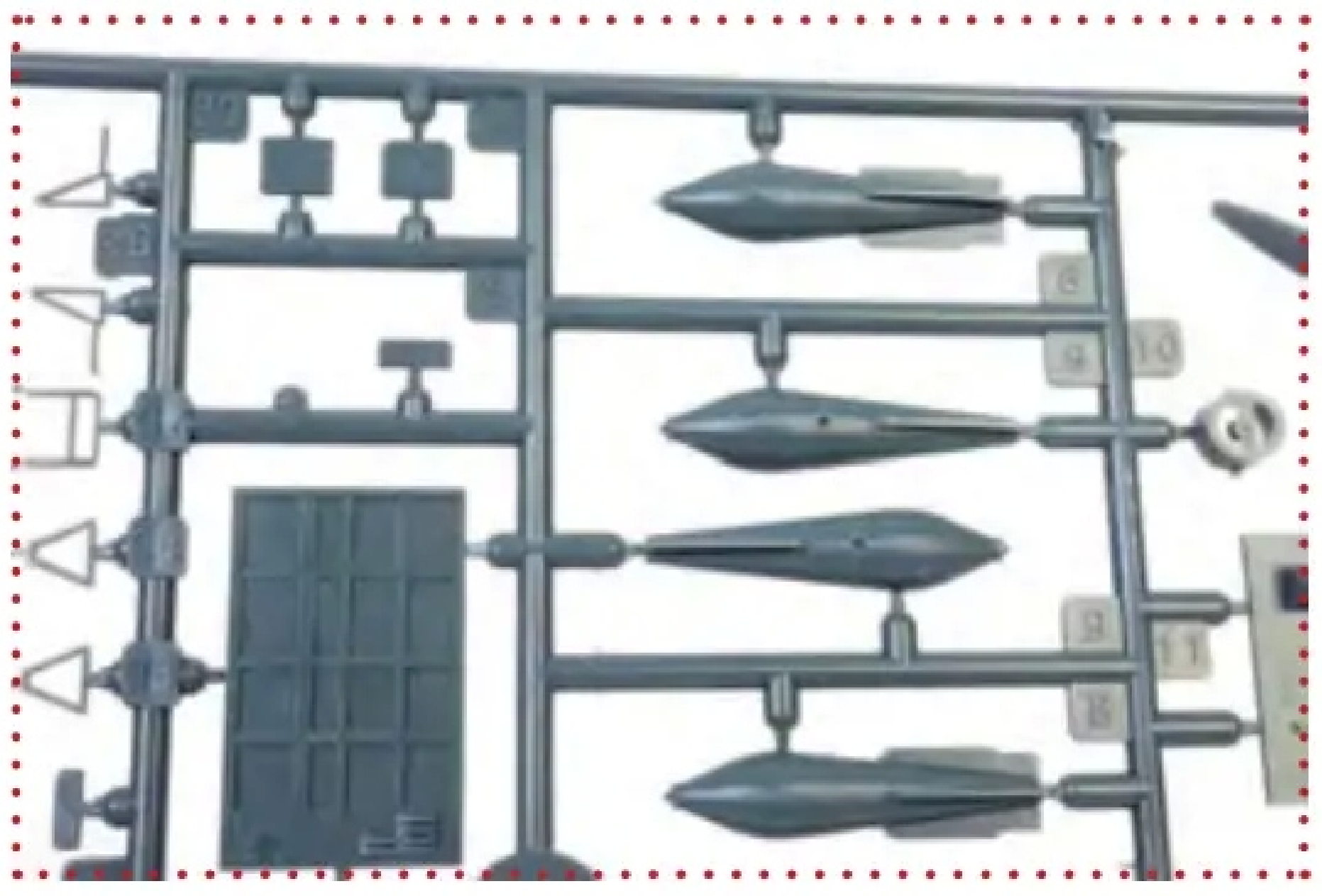
The decals are well-printed on a mid-blue backing sheet to assist in finding the many white markings. Colour density is excellent as is register, and carrier film is minimal. The unit badges are colourful and perfectly printed.

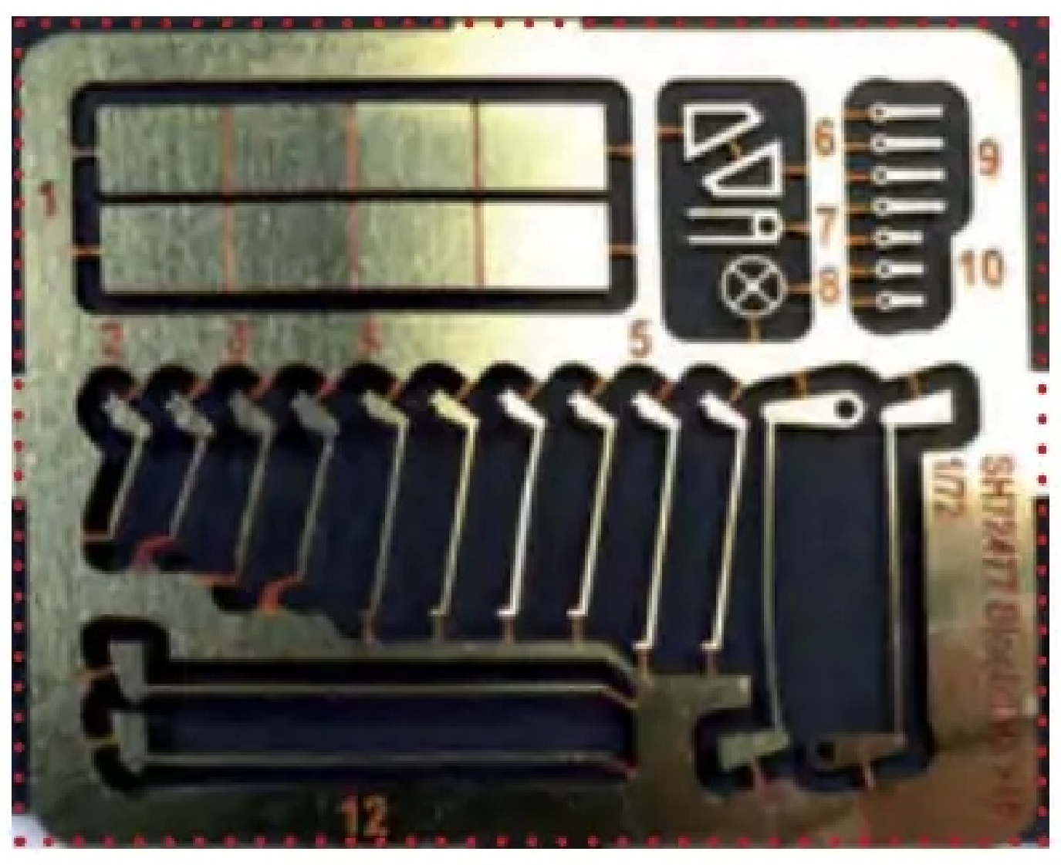
There are also some basic instrument faces for the cockpit.

This is another wonderful kit from Azure-Frrom that fills a gap in the quirky French aircraft series. If this era and air force rocks your boat then this comes highly recommended. ■

Thanks to Azur FRROM for the review sample
http://frrom.com







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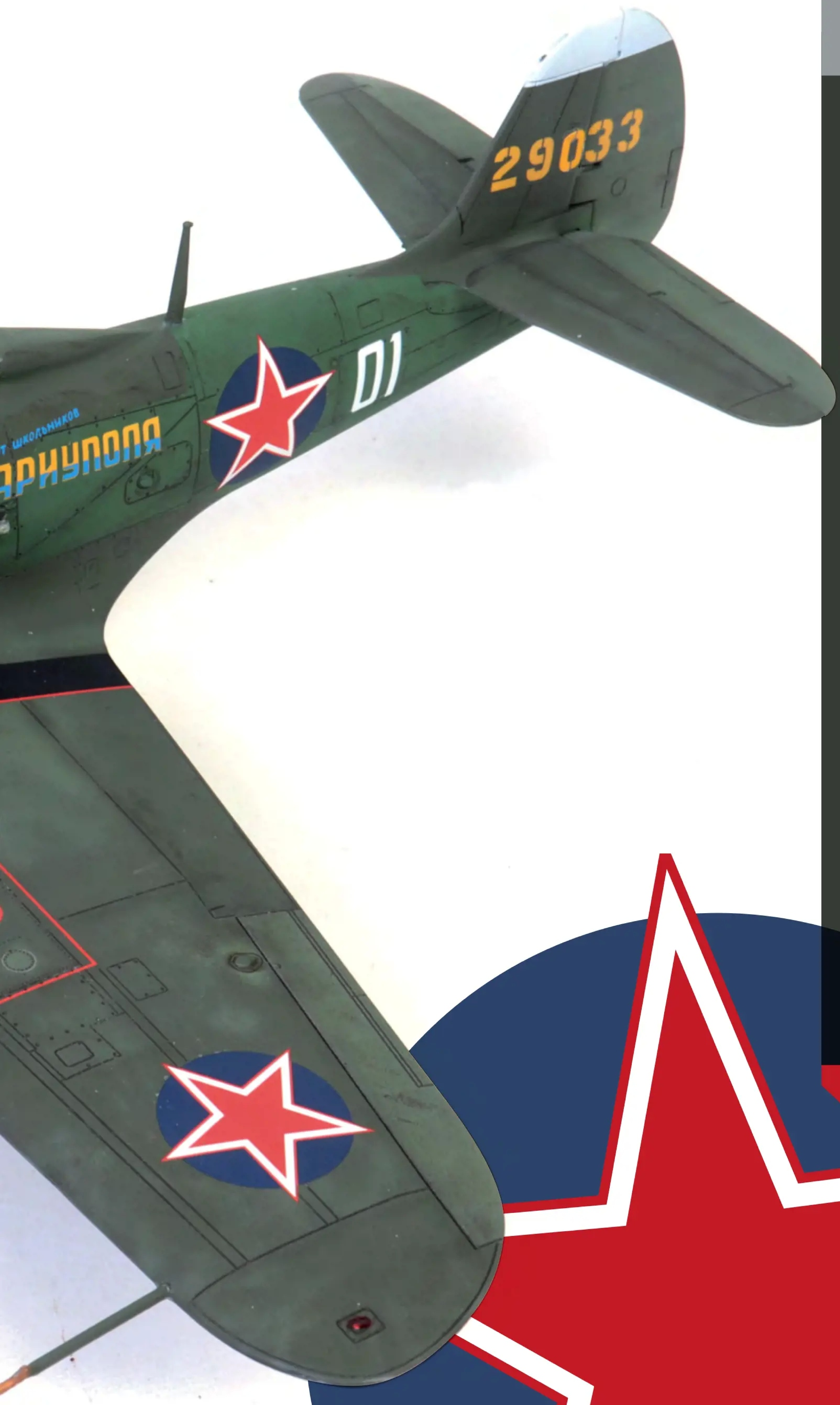
FEATURE ARTICLE

Arma Hobby 1:48 P-39N Airacobra • Kit No. 40011

RED COBRA

The Editor builds Arma Hobby's second release in their P-39 Airacobra family.



SPECIFICATION:

Arma Hobby 1:48 P-39N Airacobra. Kit No. 40011

ACCESSORIES USED:

- Eduard Item No. FE1477 - Photo-Etch P-39Q for Arma Hobby kit
- Eduard Item No. EX1067 - Masks for P-39Q
- Ultracast P-39 Seat

TOOLS AND MODELLING PRODUCTS USED:

- Tamiya Extra Thin Cement
- Revell Contacta Cement
- Gator's Grip Acrylic Glue
- Selley's Super Glue
- Zip Kicker (super glue accelerator)
- Irwin Clamps
- Tamiya Masking Tape (Yellow Kabuki tape, various widths)
- Tamiya White 2mm Masking Tape for Curves
- Iwata HP-C Plus airbrush

PAINTS AND FINISHING PRODUCTS USED:

- Tamiya (acrylic): X-18 Semi-Gloss Black; XF-1 Flat Black; XF-2 Flat White; XF-3 Flat Yellow; XF-4 Yellow Green; XF-5 Flat Green; XF-64 Red Brown).
- Tamiya Spray Can: AS-12 Bare Metal Silver.
- SMS Premium Lacquer Paints: PLP01 Surfacer Grey; US Olive Drab FS33070; PL78 Foliage Green FS34092; PL10 Flat Clear;
- Mr Hobby Mr Color Leveling Thinner 400.
- Vallejo Model Color (acrylic): 70865 Oily Steel; 919 Foundation White; 70953 Flat Yellow; 70957 Flat Red.
- Vallejo Panzer Aces (acrylic): 301 Light Rust; 337 Highlight Ger. (Black)
- Future Floor Polish
- Tamiya Panel Line Accent Colour (Dark Brown)
- SMS Flat Clear
- Prismacolor Silver Pencil
- Tamiya Weathering Pastels Set A
- Solvaset decal setting solution
- Future Floor Polish

✓
- Accurate outline
- Crisp and fine recessed panel lines
- Sensible breakdown
- High level of detail

✗ Not much to mention

Thanks to Arma Hobby for the sample
www.armahobby.com

RATING: 8.5/10

Arma Hobby 1:48 P-39N Airacobra • Kit No. 40011

The Bell P-39 Airacobra was a fighter produced by Bell Aircraft for the United States Army Air Forces during the Second World War. It was one of the principal American fighters in service when the United States entered combat.

It had an unusual layout, with the engine installed in the centre fuselage, behind the pilot, and driving a tractor propeller in the nose with a long shaft. It was also the first fighter fitted with a tricycle undercarriage. Although its mid-engine placement was innovative, the P-39 design was handicapped by the absence of an efficient turbo-supercharger, preventing it from performing high-altitude missions. It was therefore rejected by the RAF for use over western Europe but adopted by the USSR, where most air combat took place at medium and lower altitudes.

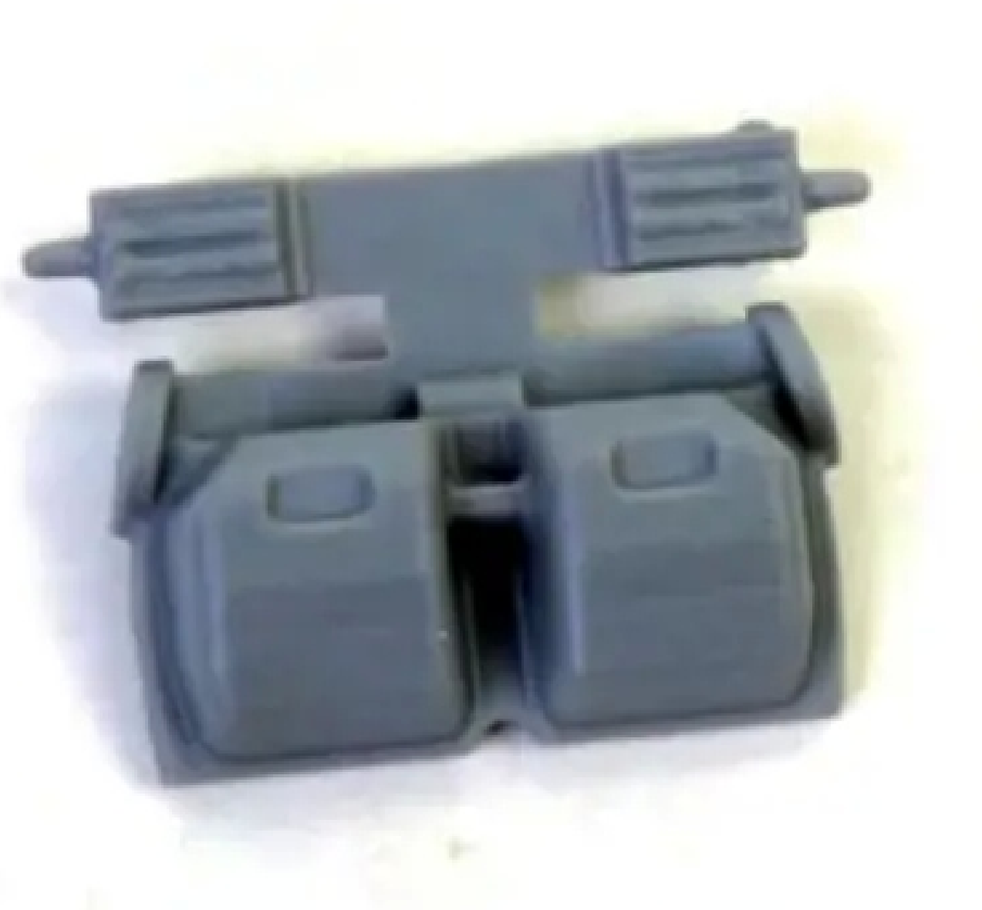
Nearly half of all P-39s were sent to the Soviet Union: 4,719, accounting for more than one-third of all US and UK-supplied fighter aircraft in the VVS. [53] The Soviet Air Forces received the considerably improved N and Q models via the Alaska-Siberia ferry route. The tactical environment of the Eastern Front suited the P-39's strengths—sturdy construction, reliable radio gear, and good firepower—and did not demand the high-speed, high-altitude performance of RAF and AAF operations.

The first Soviet Cobras had a 20 mm Hispano-Suiza cannon and two heavy Browning machine guns, synchronized and mounted in the nose. Later Cobras arrived with the M4 37 mm cannon and four machine guns, two synchronized and two wing-mounted. "We immediately removed the wing machine guns, leaving one cannon and two machine guns," Golodnikov recalled later. That modification improved roll rate by reducing rotational inertia.

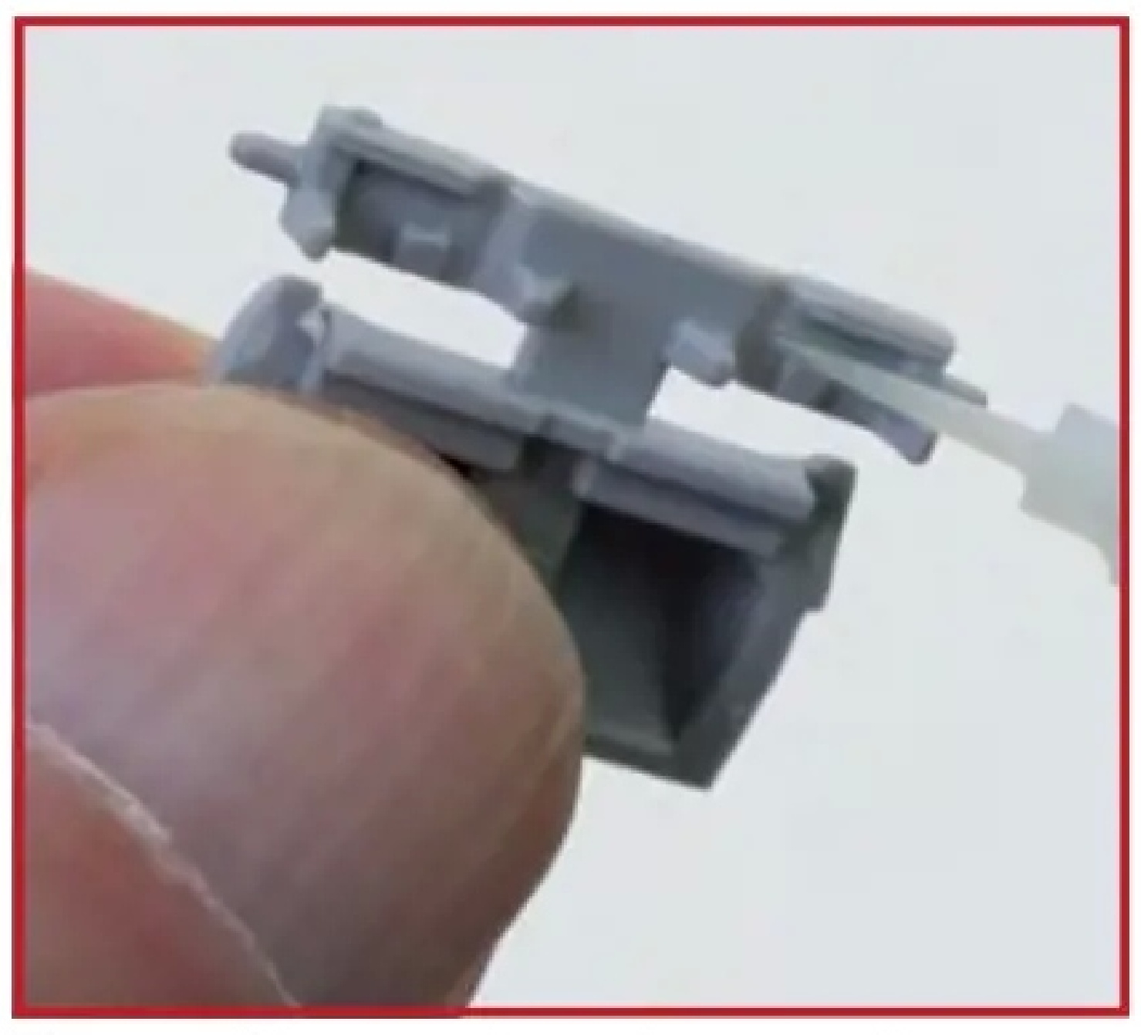
Soviet airmen appreciated the M4 cannon with its powerful rounds and the reliable action but complained about the low rate of fire (three rounds per second) and inadequate ammunition storage (only 30 rounds).

The United States did not supply M80 armour-piercing rounds for the autocannons of Soviet P-39s; instead, the Soviets received 1,232,991 M54 high-explosive rounds, which they used primarily for air-to-air combat and against soft ground targets.
The VVS did not use the P-39 for tank-busting.

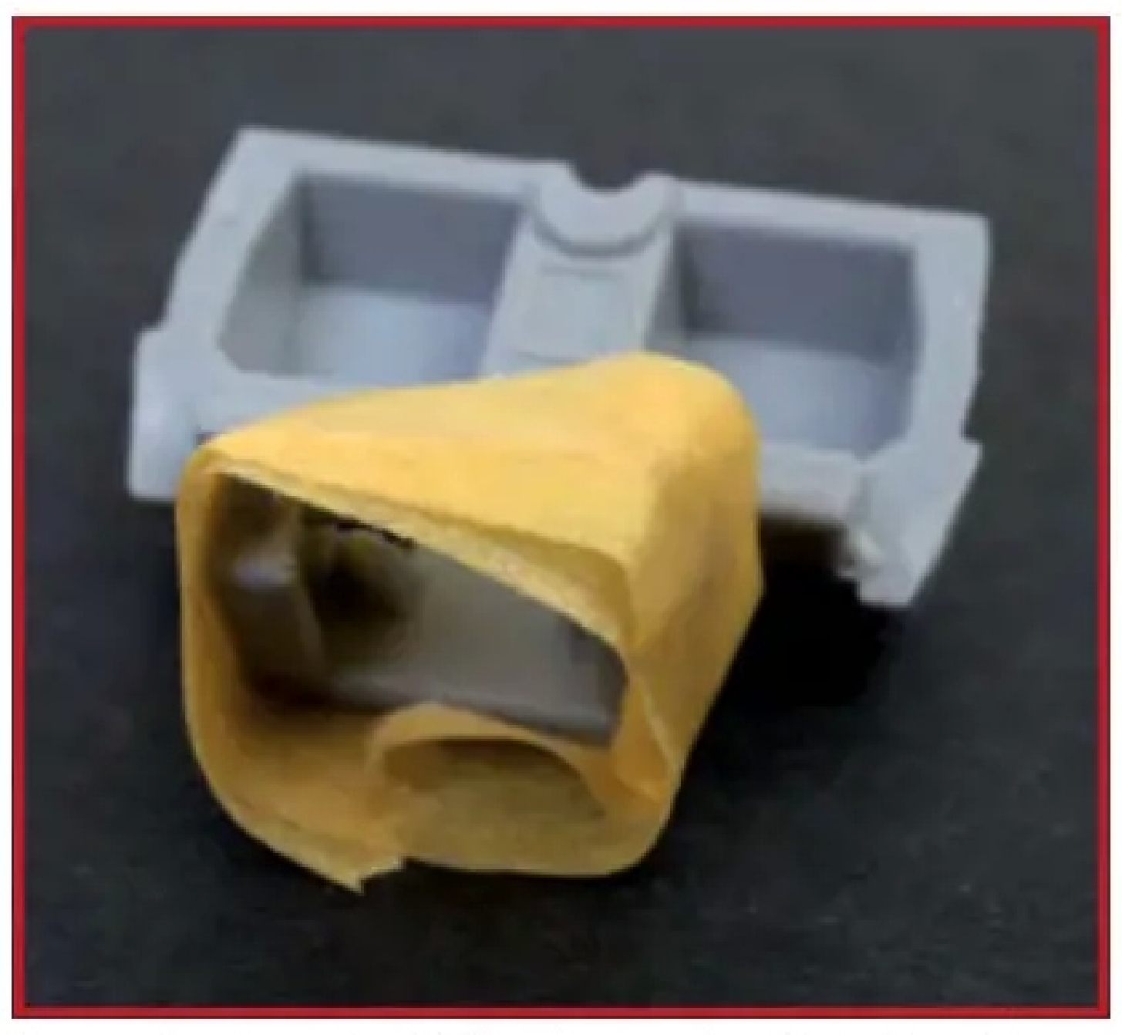
The Soviets used the Airacobra primarily for air-to-air combat. They developed successful group aerial fighting tactics, and scored an outsized number of aerial victories over a variety of German aircraft, including Bf 109s, Focke-Wulf Fw 190s, Ju 87s, and Ju 88s. Soviet P-39s had no trouble dispatching Junkers Ju 87 Stukas or German twin-engine bombers and matched, and in some areas surpassed, early and mid-war Messerschmitt Bf 109s. The usual nickname for the Airacobra in the VVS was Kobrushka ("little cobra") or Kobrastochka, a blend of Kobra and Lastochka (swallow), "dear little cobra".



The front cockpit bulkhead is moulded with the machine gun breeches as a flat piece.

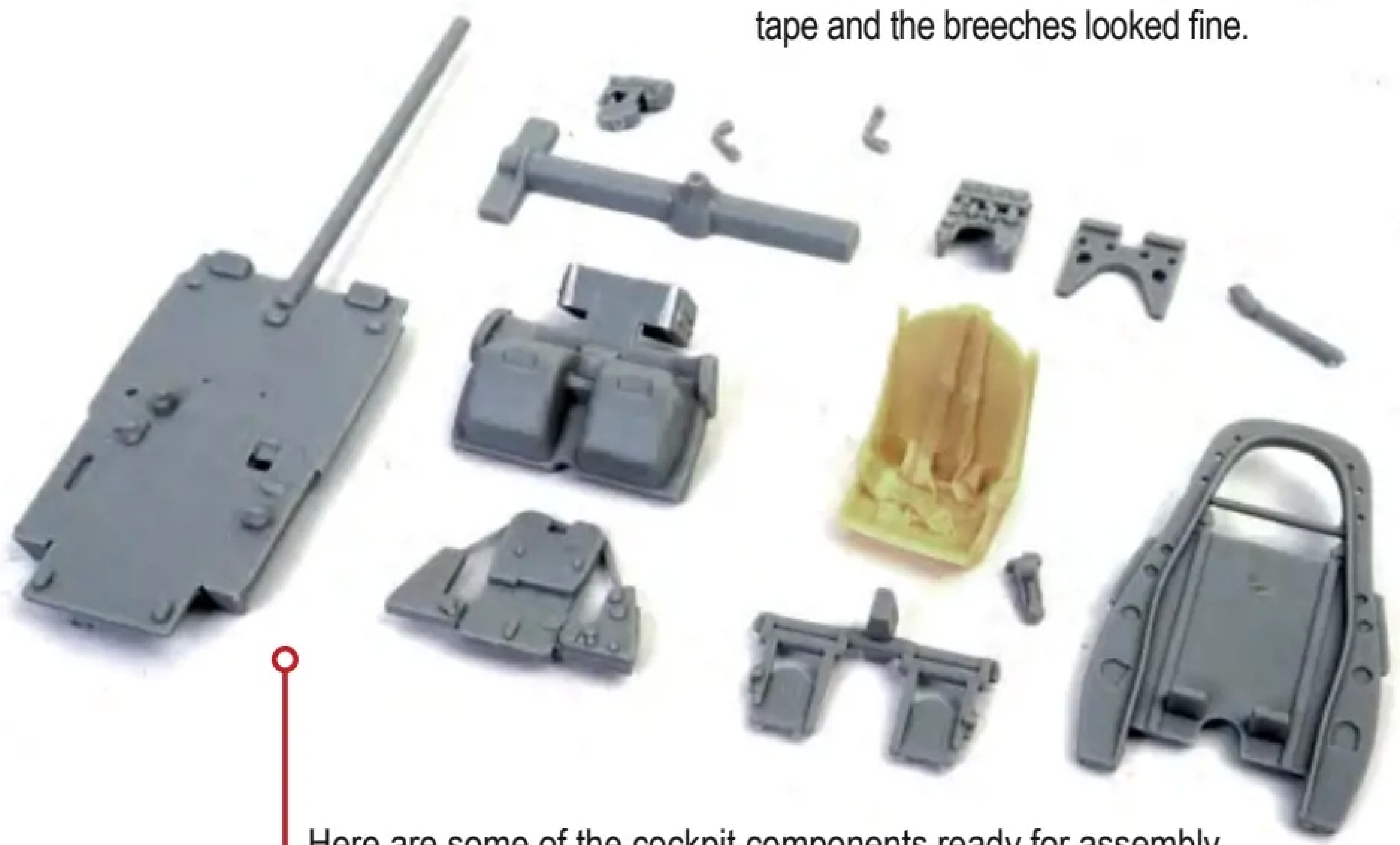


The machine gun breeches must be folded back to find their correct position.



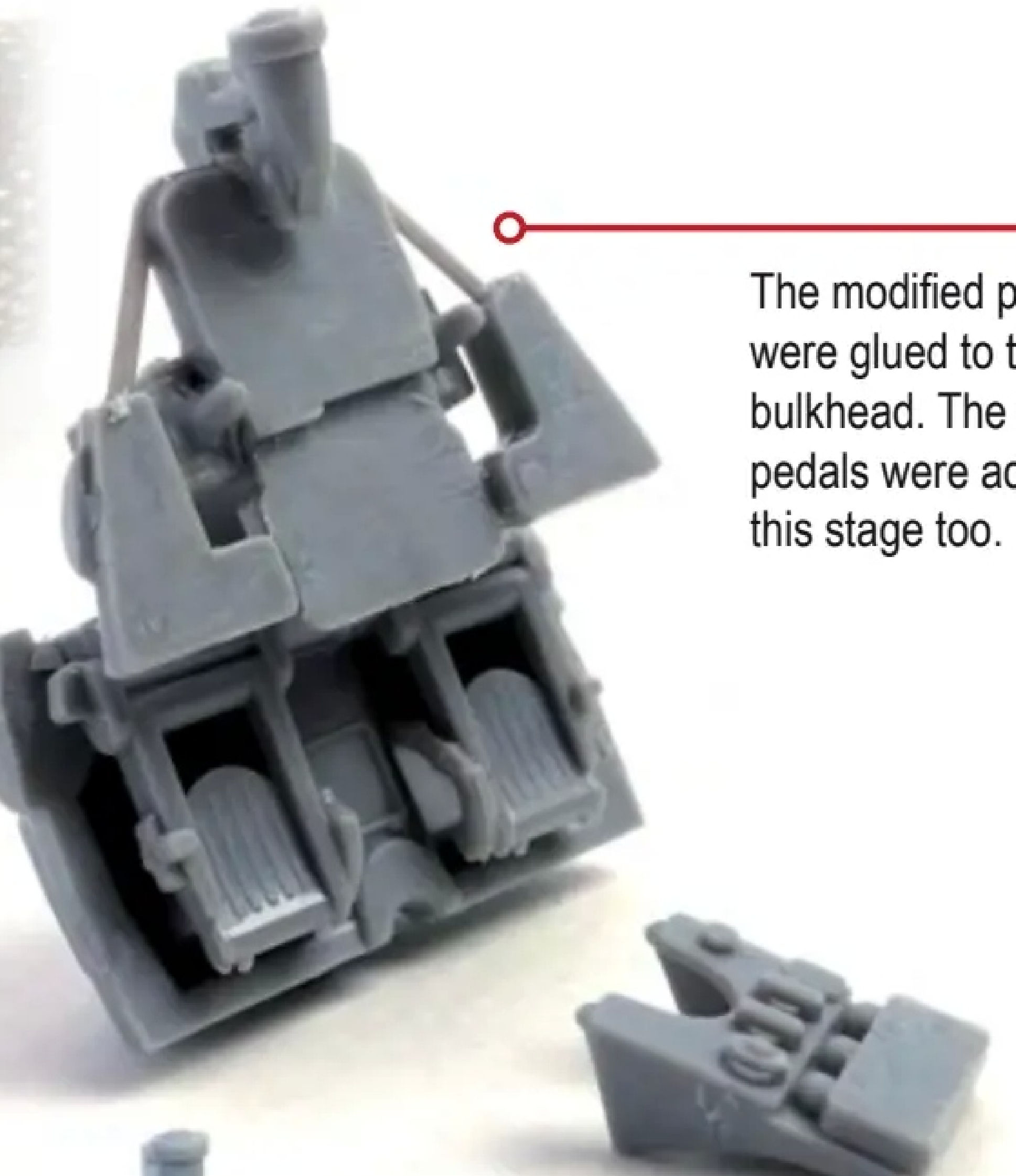
I used a bead of Tamiya extra thin liquid cement to soften the joint. After leaving the breeches and bulkhead alone for a few minutes, I removed the Tamiya masking tape and the breeches looked fine.

The doors and the canopy were masked and sprayed.

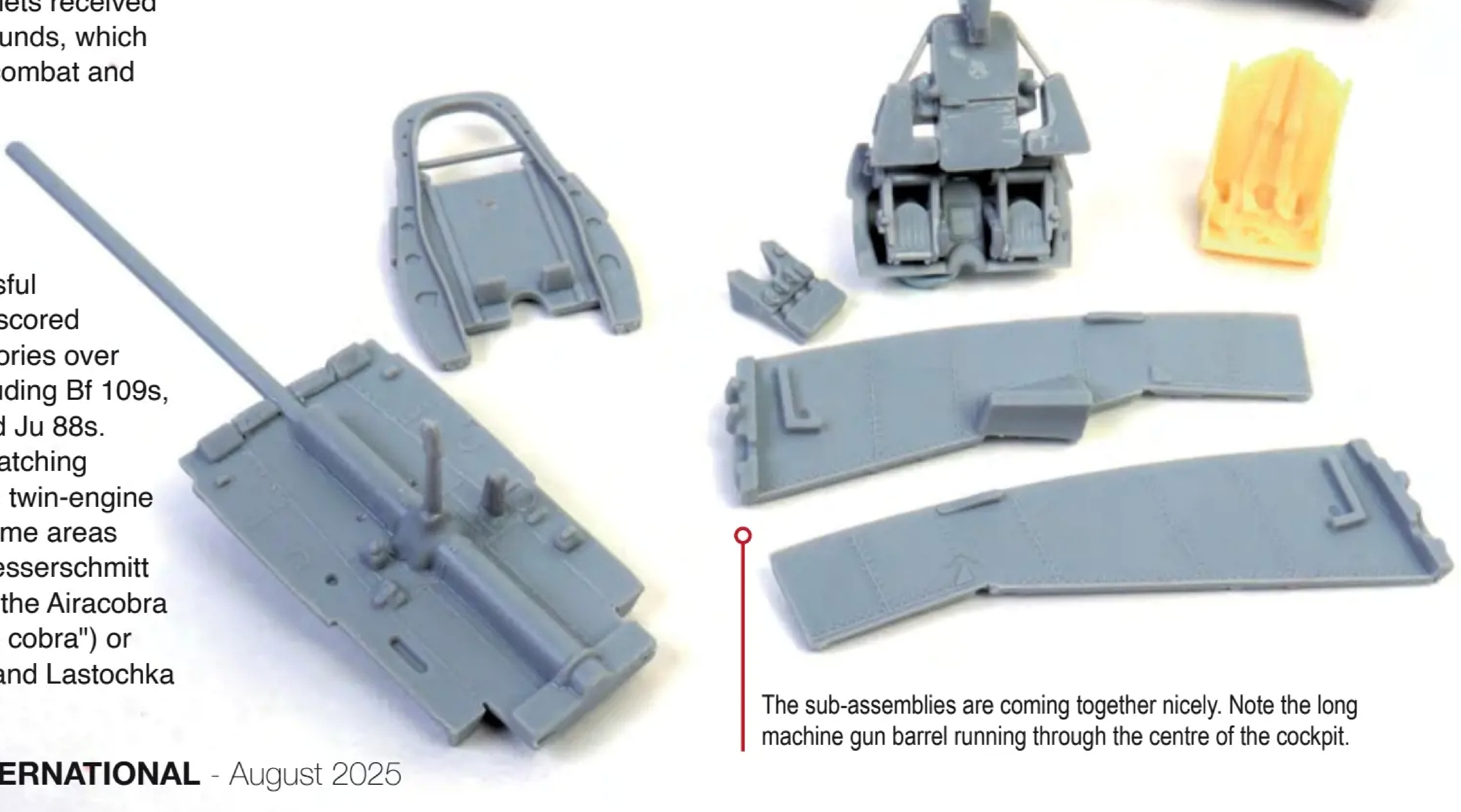


Here are some of the cockpit components ready for assembly. Note the old Ultracast resin seat with harness straps moulded in place. Also note the stress marks on the plastic where the machine gun breeches have been folded back.

Raised detail was scraped from the front of the instrument panels.



The modified panels were glued to the front bulkhead. The rudder pedals were added at this stage too.



The sub-assemblies are coming together nicely. Note the long machine gun barrel running through the centre of the cockpit.

IN THE BOX

Arma Hobby launched their all-new 1:48 scale Airacobra family with Kit No. 40010, the P-39Q in 2024. This kit sold out quickly, so hot on its heels Arma has released Kit No. 480011, the P-39N Airacobra.

The box title sells the contents short though, as parts for the P-39D/P-400 to P-39N and Q are all on the sprues.

Arma Hobby's 1:48 scale Bell P-39Q Airacobra comprises 85 parts in grey plastic, two parts in grey coloured 3d printed resin, six parts in clear plastic, three chrome balls, yellow Kabuki die-cut self-adhesive paper canopy masks and decals for three marking options.

The grey plastic parts are delivered on three sprues. Moulding quality is generally excellent.

The P-39Q kit suffered from three sink lines on the upper surface of the wings but that issue seems to be addressed with this issue. The plastic parts otherwise boast a lovely smooth texture.

Being a long-run kit, the parts are moulded with all the alignment aids that you would expect including pins, holes, slots and tabs.

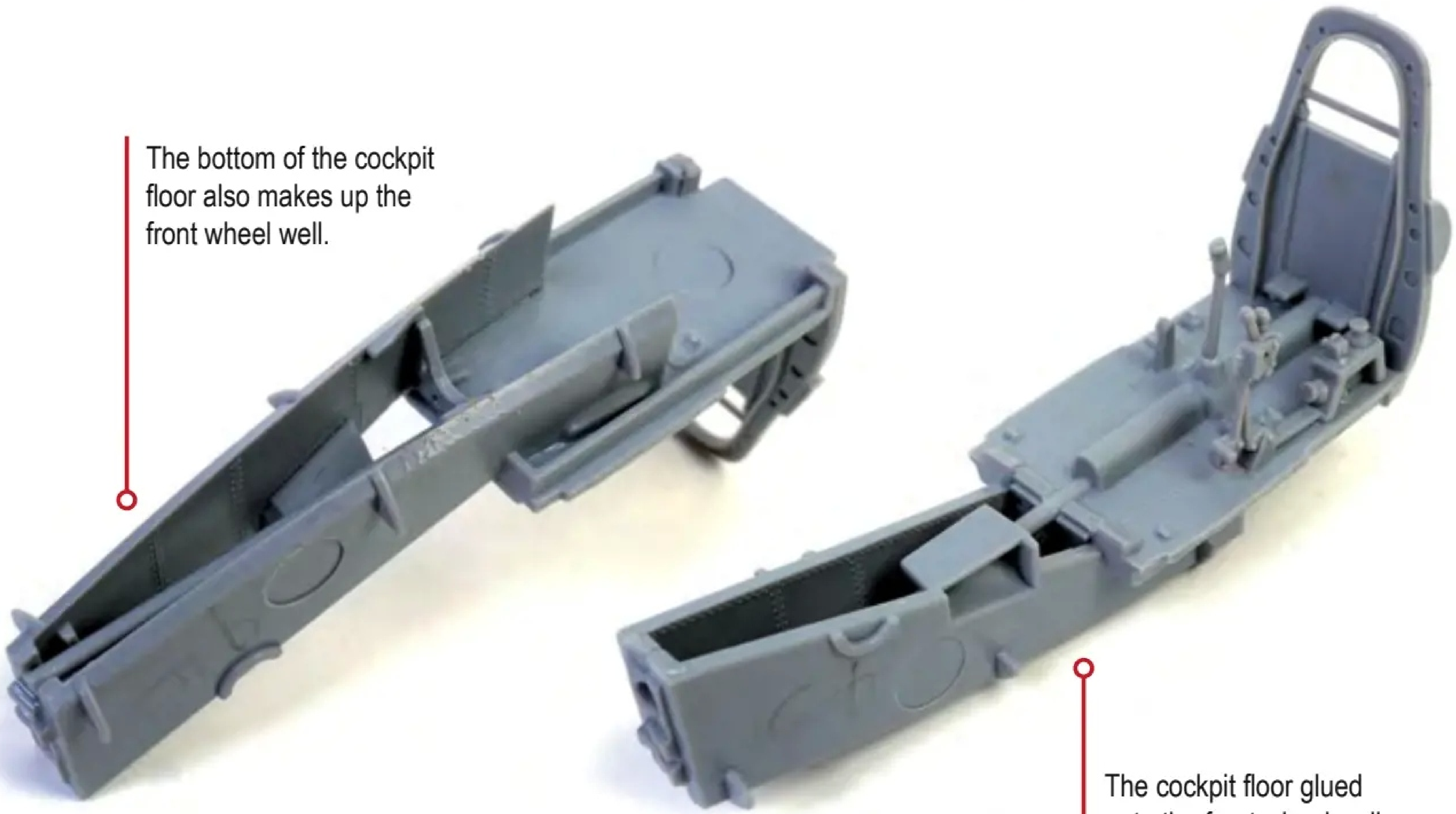
Moulding quality is excellent. So far I have only found one ejector pin circle and that is only on the inside of an undercarriage door.

Some of the sprue attachments are moulded to the surfaces of the kits so take care when cutting these off and cleaning them up.

Surface textures are just gorgeous. Recessed panel lines, circular fastener heads and other structural details are very fine.

The fuselage is supplied as left and right halves with a few elements that allow some important options.

The most obvious is the forward upper gun cowl panels. Three styles are included with subtle variations. ▶



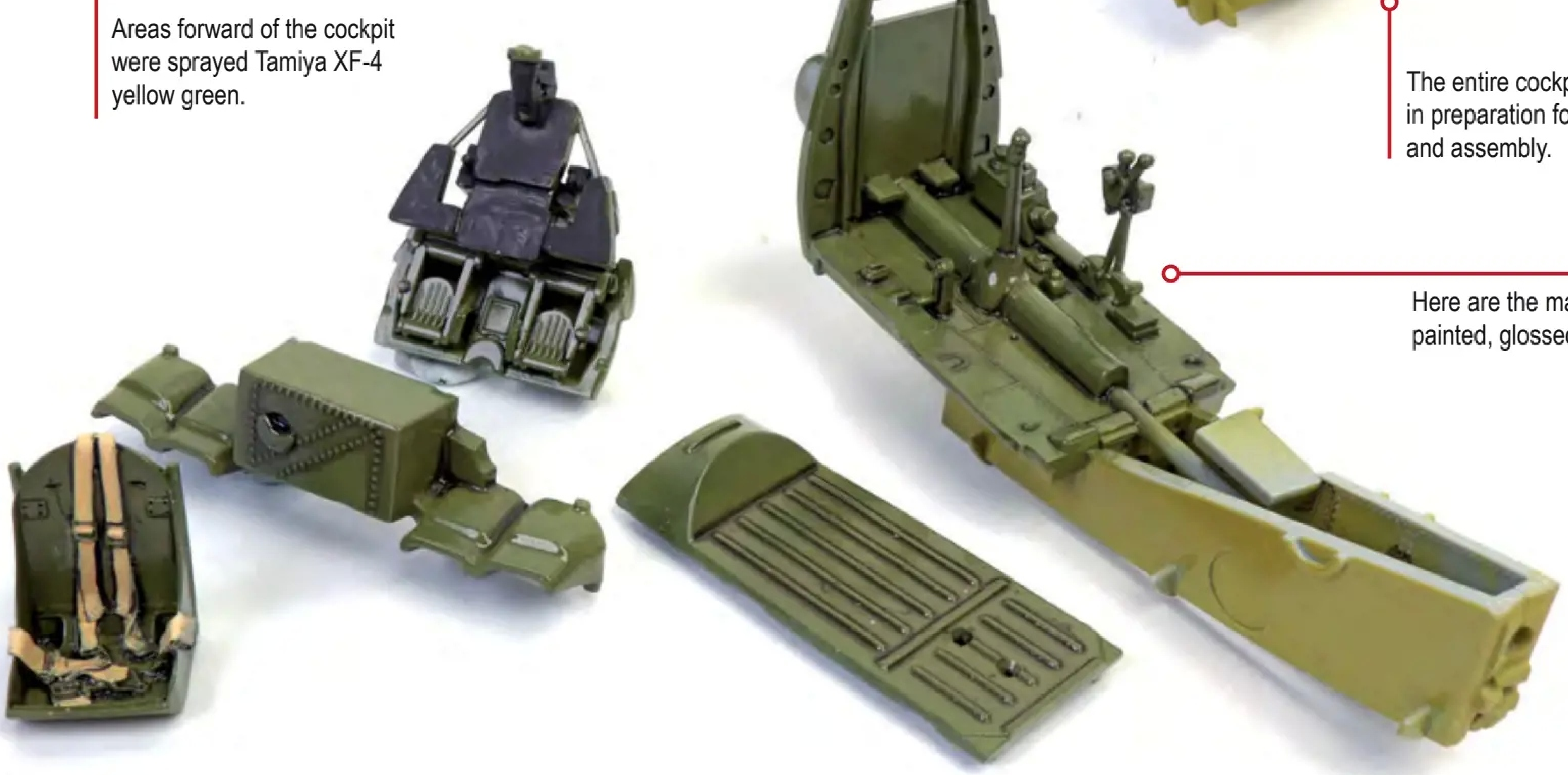
The bottom of the cockpit floor also makes up the front wheel well.

The cockpit floor glued onto the front wheel well.

SMS premium lacquer paints were used to paint the interior green of the cockpit.

Areas forward of the cockpit were sprayed Tamiya XF-4 yellow green.

The entire cockpit was masked in preparation for further painting and assembly.



Here are the main cockpit parts painted, glossed and washed.

Arma Hobby 1:48 P-39N Airacobra • Kit No. 40011

◀ Some cockpit structural detail is moulded directly to the inside of the fuselage halves. Additional separate parts include a plastic cockpit floor, throttle quadrant; instrument panel, a moulded pair of rudder pedals, control column, radios and more.

The instrument panel features raised detail that will respond well to careful dry brushing.

There are some really nice plastic details in the cockpit too.

As an alternative, an overlay decal is supplied for the instrument panels and switch panel. Harness strap decals are included as well.

Three chrome metal balls are supplied as nose weight. These are placed into recesses above the front landing gear bay.

Three styles of exhaust are supplied. These are moulded as one-piece per side. The ends are moulded solid.

The wing parts are full span lower and upper halves. They are suitably thin at the trailing edges. Aileron hinge lines are appropriately heavier than the general panel line detailing.

The wheel wells are nicely detailed between the upper wing halves. The are presented as one piece each and feature very fine raised letter on the sidewalls. Tyre tread is smooth. The wheels are subtly bulged and flattened.

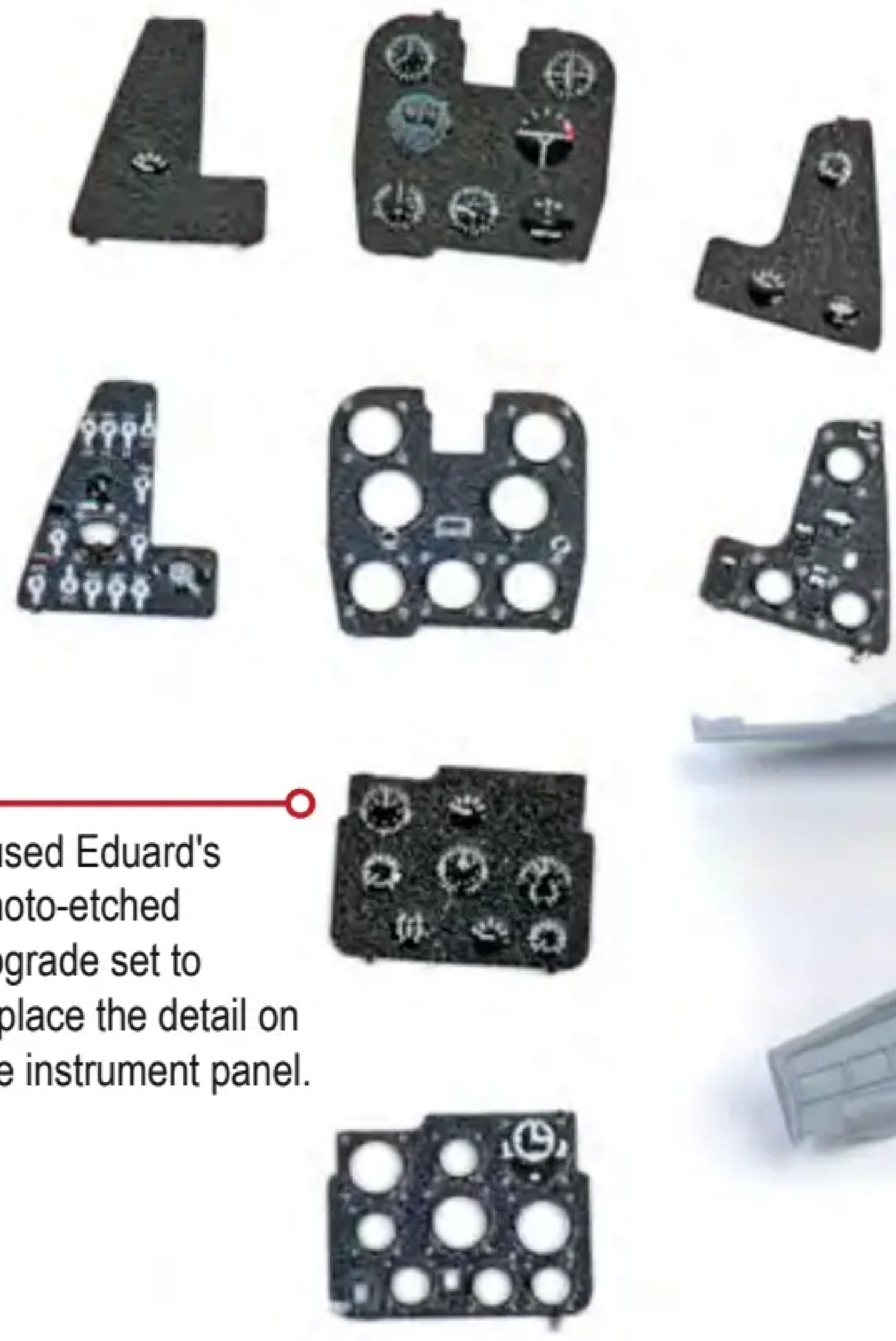
Elevators and rudder are separate parts and may be posed to taste.

The tail wheel and strut are moulded as a single part. Detail looks good.

Ordnance includes two underwing gun pods, a drop tank and 250 lb bombs.

There are two tiny 3d printed parts that represent forward fuselage air vents.

The canopy parts are thin and clear. ▶



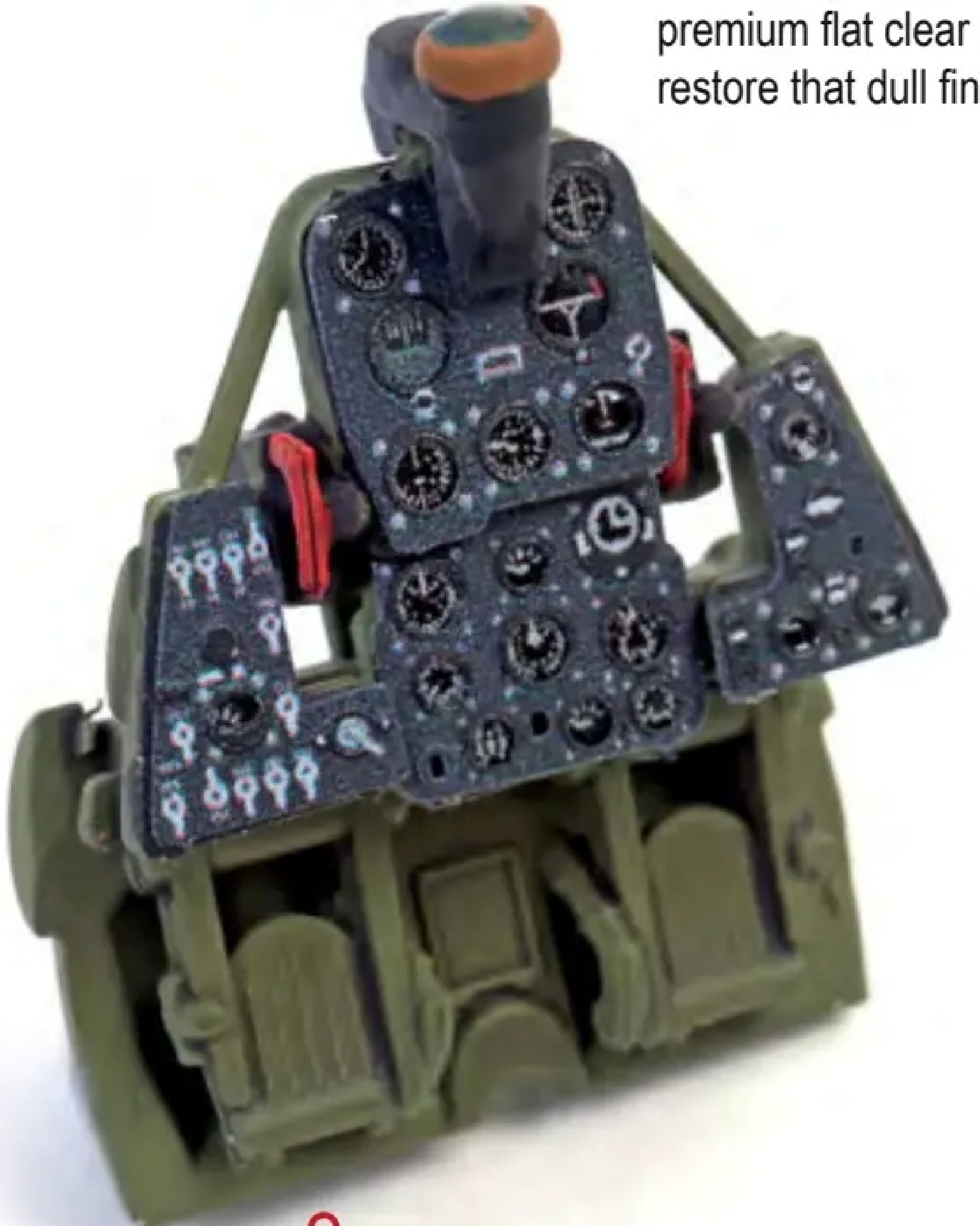
I used Eduard's photo-etched upgrade set to replace the detail on the instrument panel.

Future
RESTORE YOUR FLOOR!
PREMIUM
FLOOR FINISH
LONG LASTING SHINE
TOUGH ACRYLIC PROTECTION
CAUTION:
27 FL OZ
(1 PT. 11 OZ)
798mL

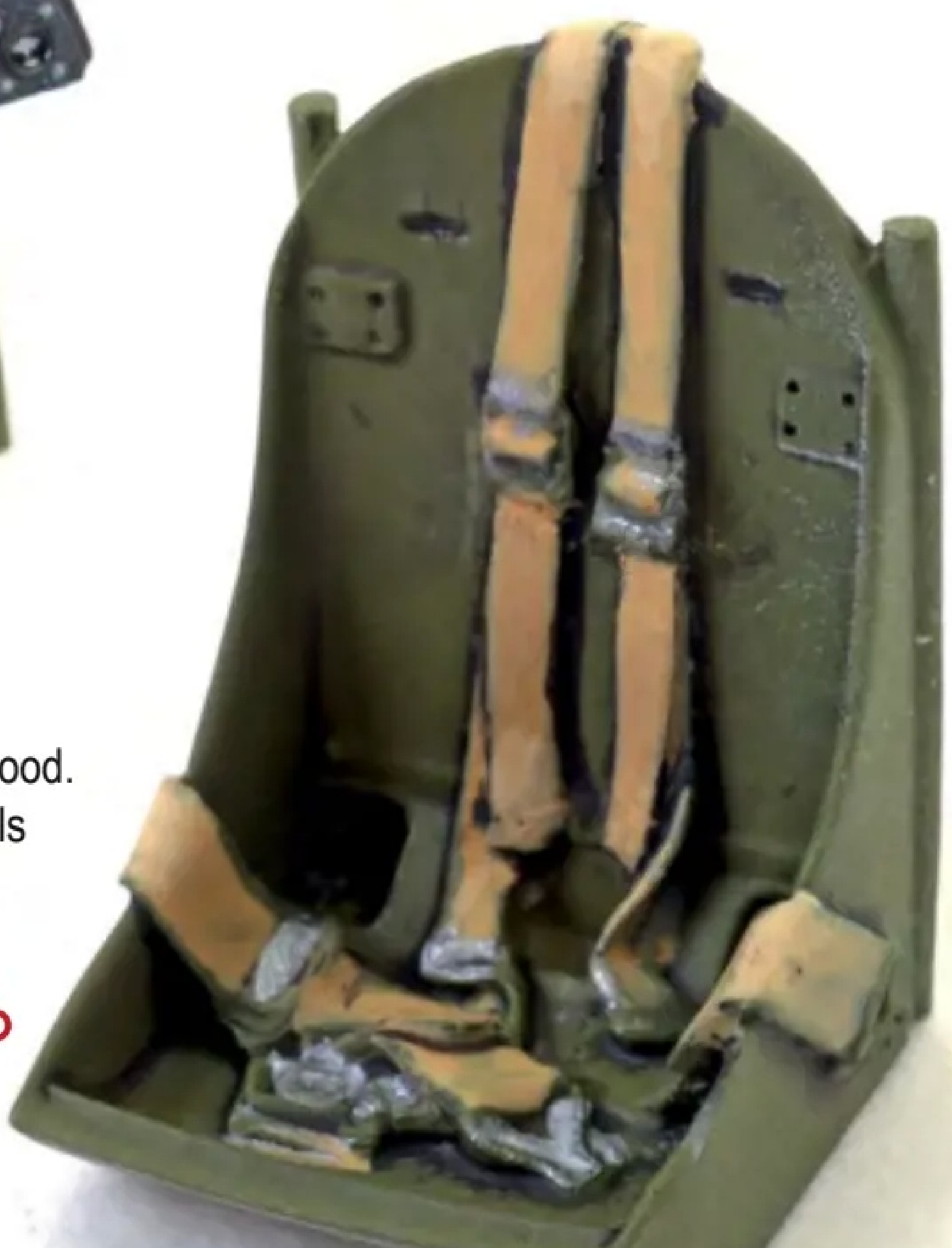
The last remnants of my future floor polish were used to obtain a high gloss finish on the inside of the fuselage halves.

SMS
THE SCALE MODELLERS SUPPLY
PREMIUM
FLAT CLEAR
30ml · ACRYLIC LACQUER · FLAT
AIRBRUSH READY HOBBY PAINTS

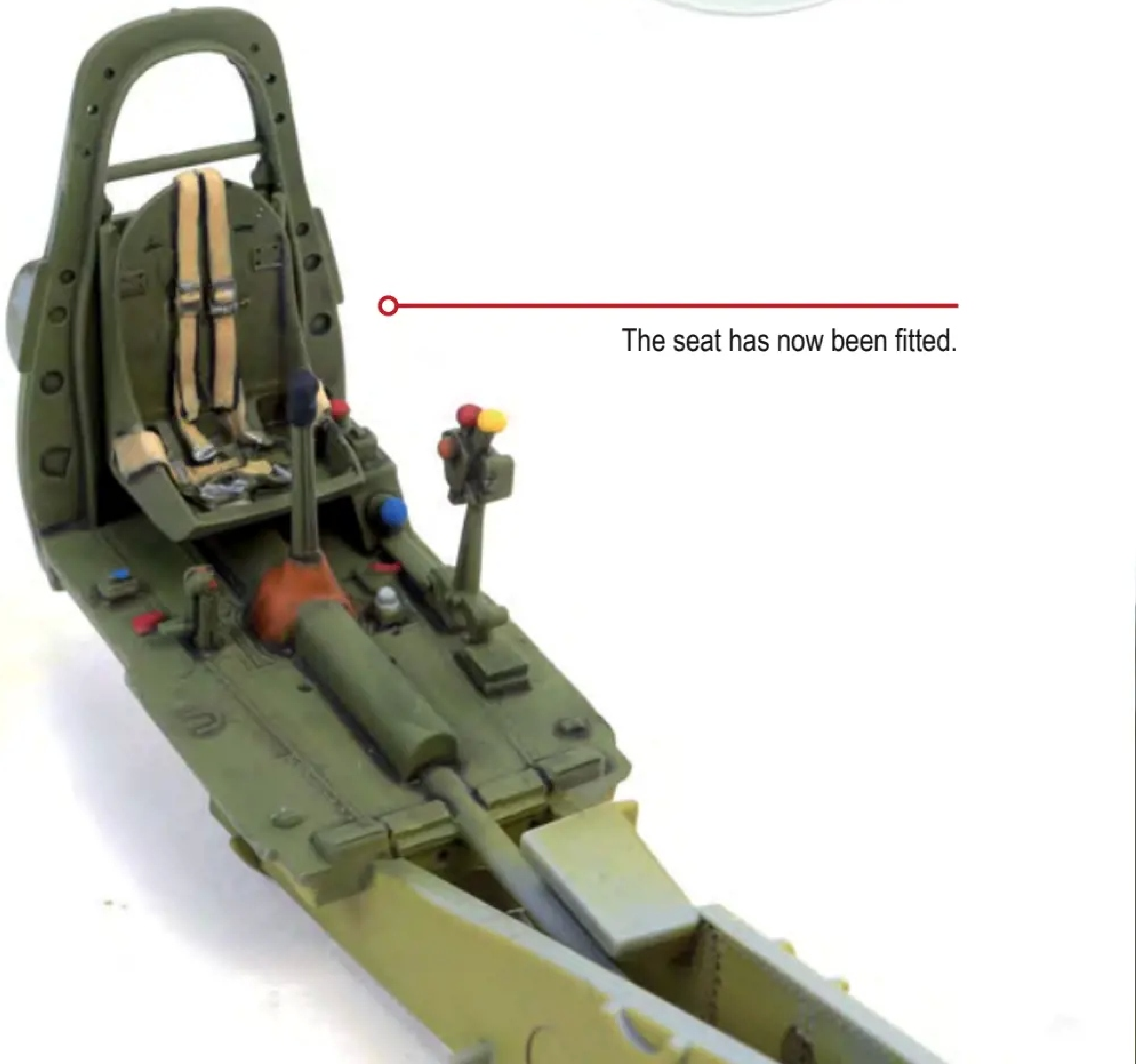
The rest of the parts were sprayed with SMS premium flat clear to restore that dull finish.



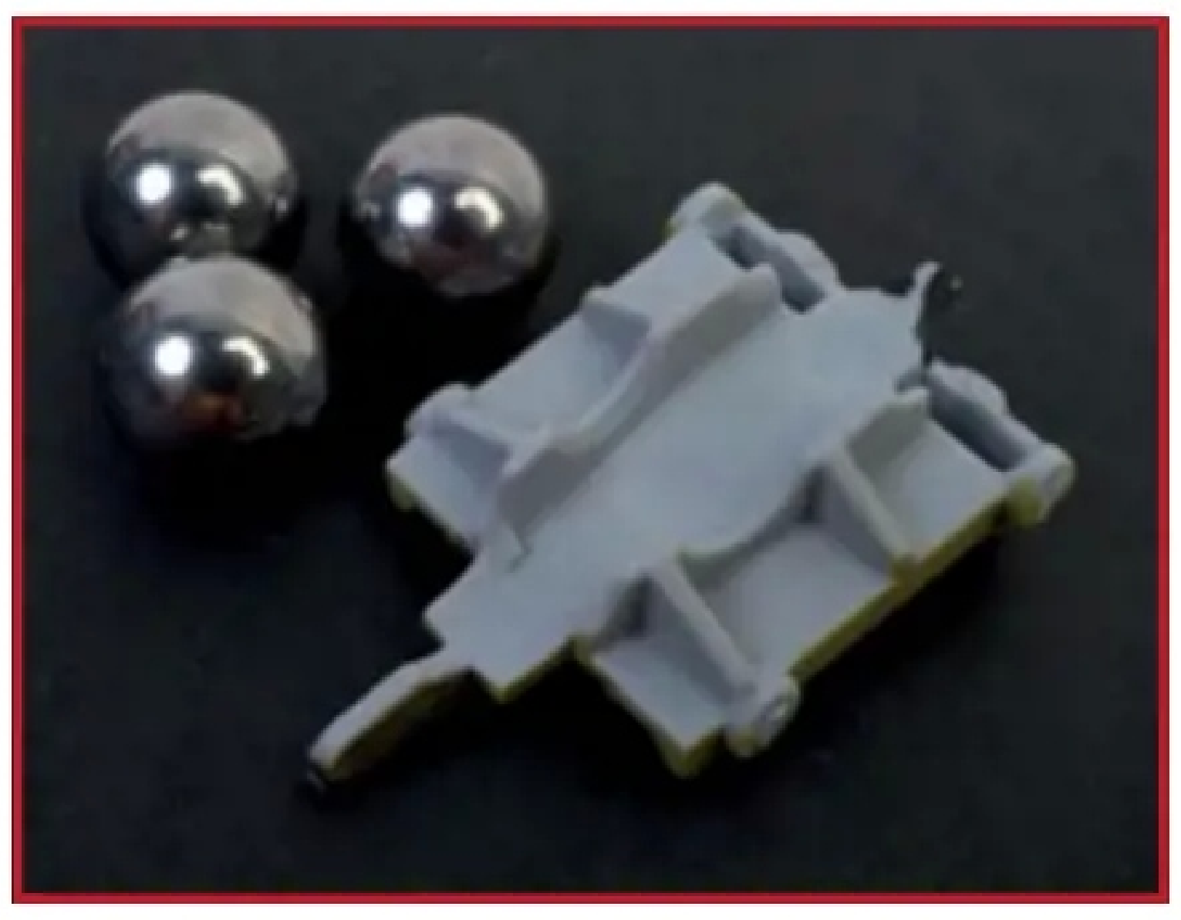
Cockpit detail is really very good. The Eduard instrument panels look great.



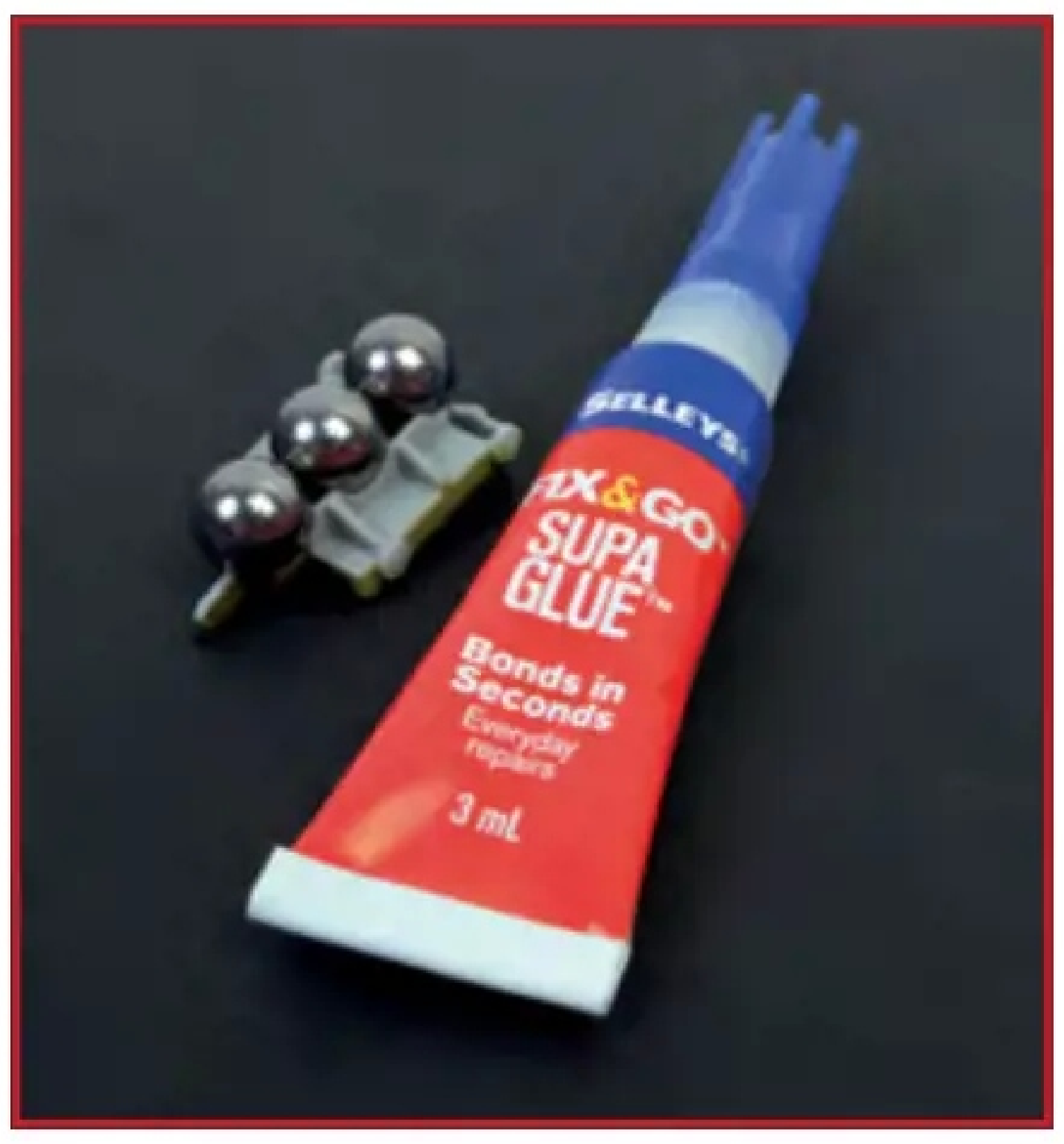
Although the Ultracast seat is pushing 30 years old, I think that it is still about the best available today.



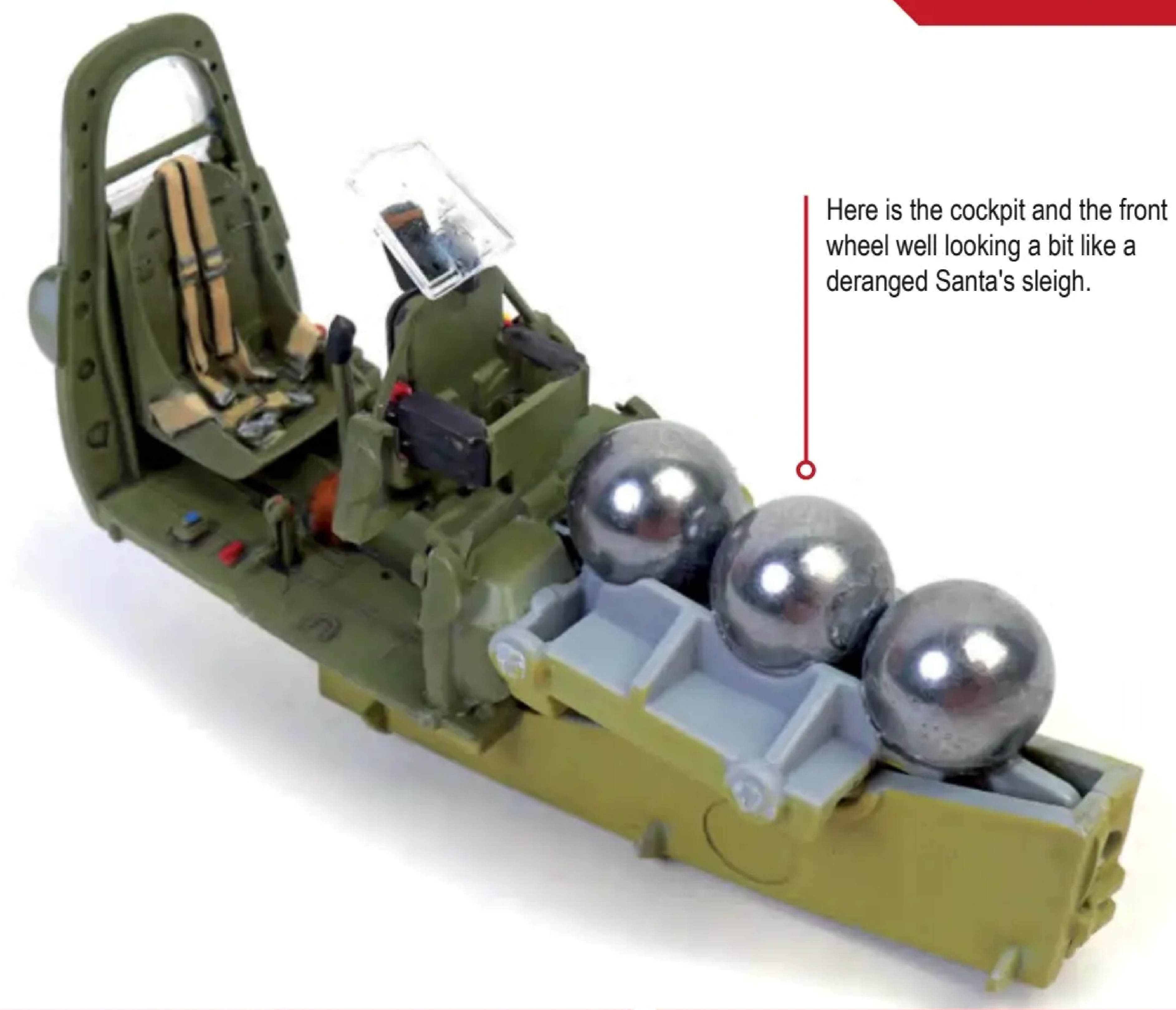
The seat has now been fitted.



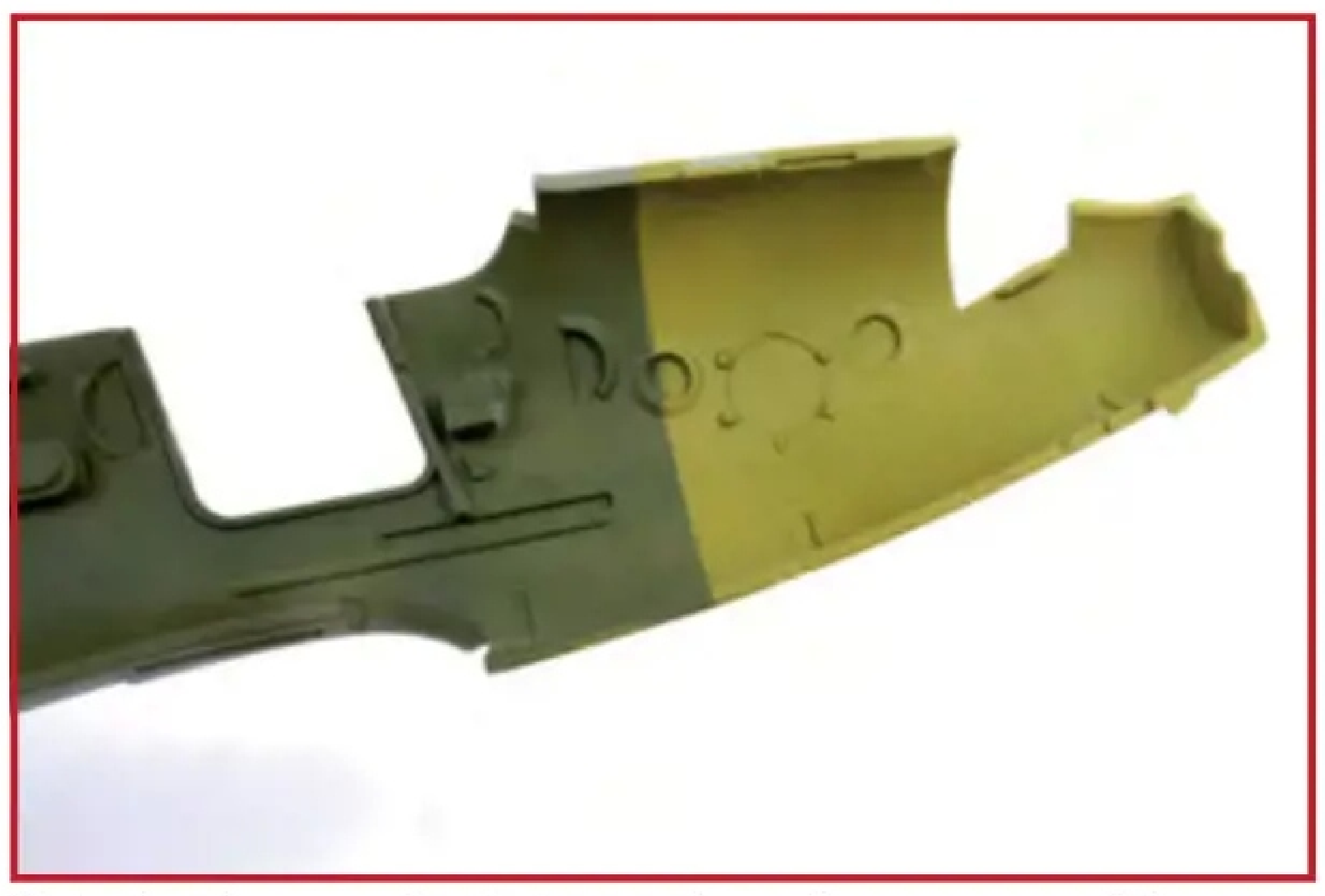
Arma Hobby helpfully supplies three chrome balls as nose weight.



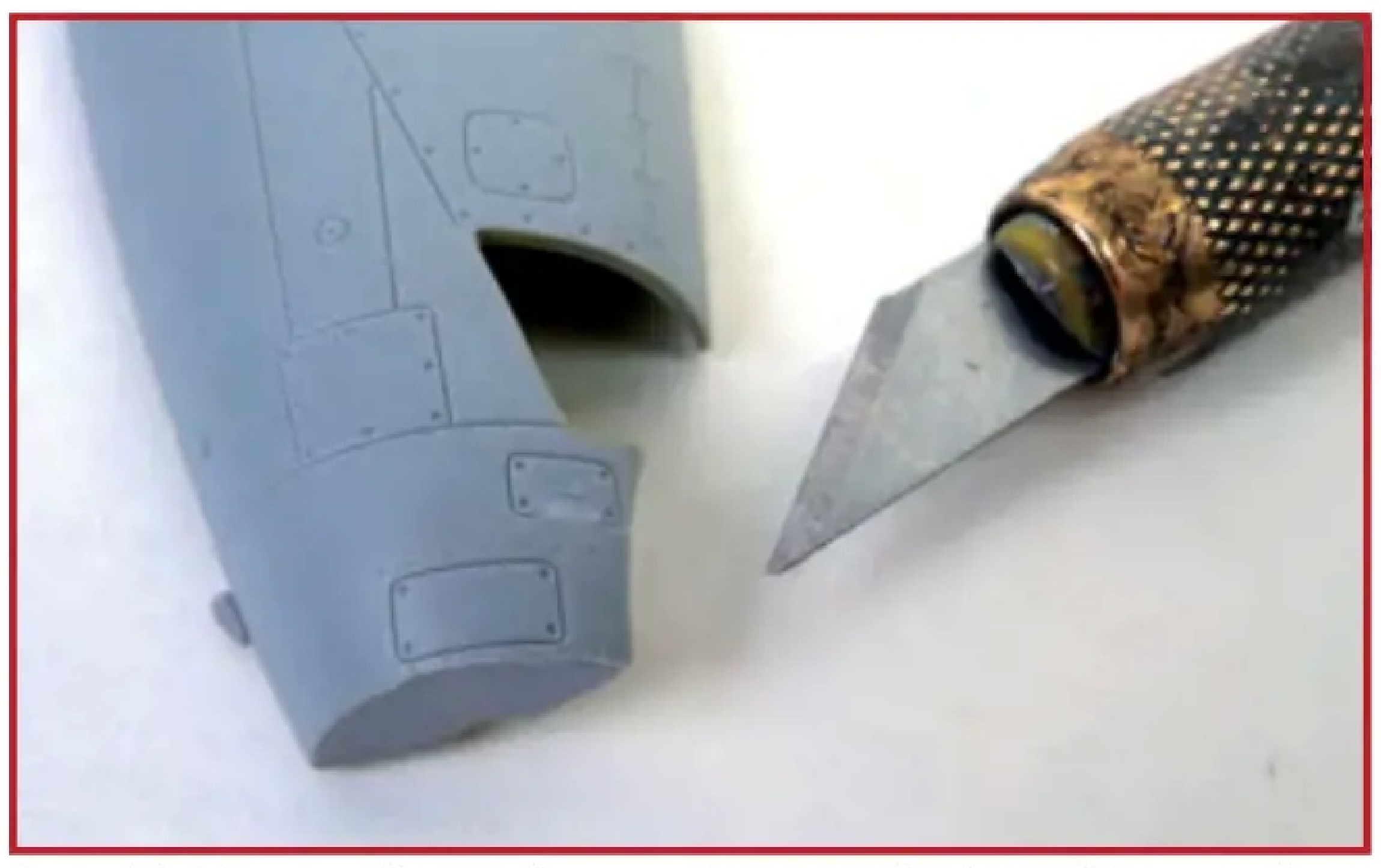
These are fixed to a custom mount using Selley's super glue.



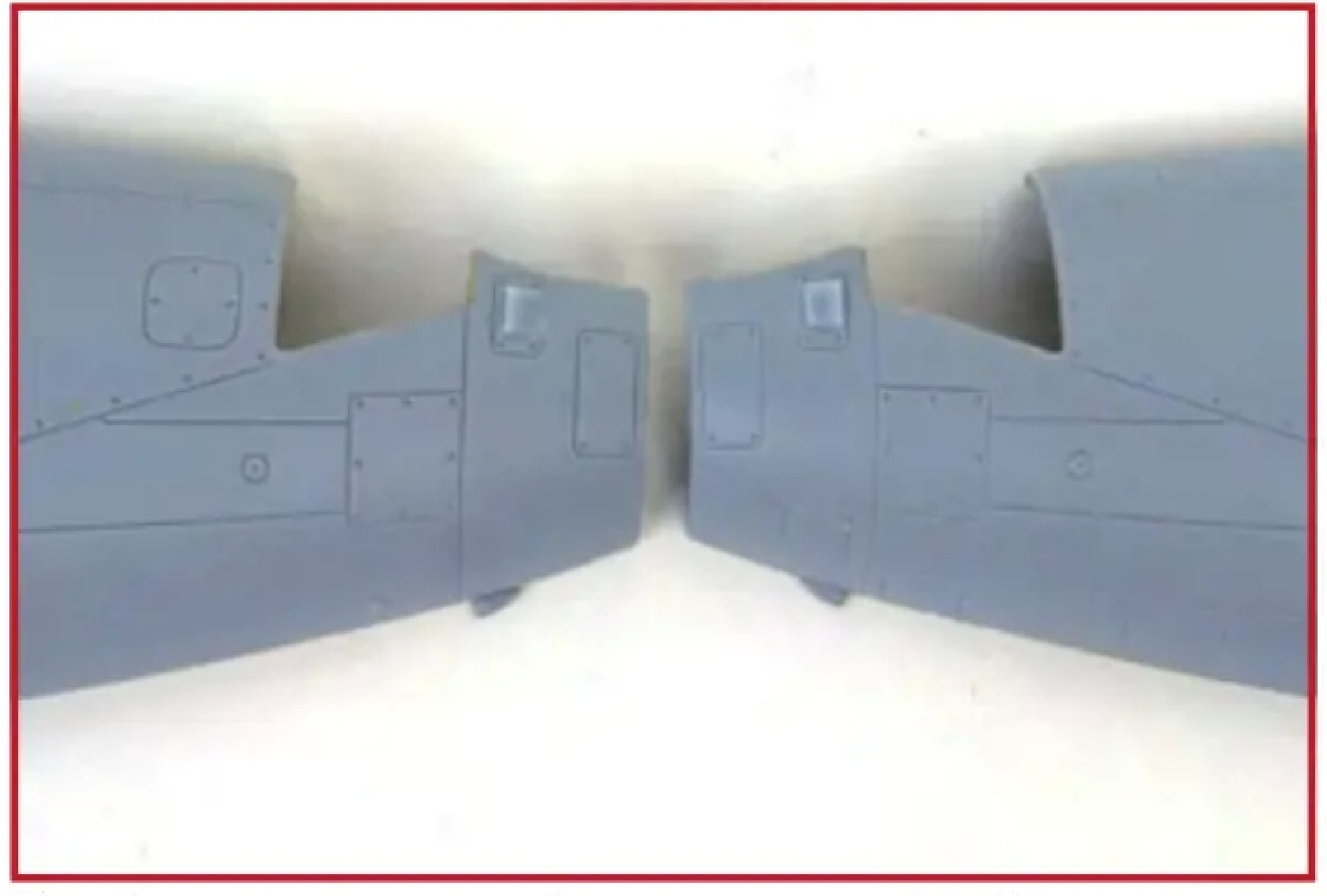
Here is the cockpit and the front wheel well looking a bit like a deranged Santa's sleigh.



Note the demarcation between the yellow green and the interior green on the inside of the fuselage.

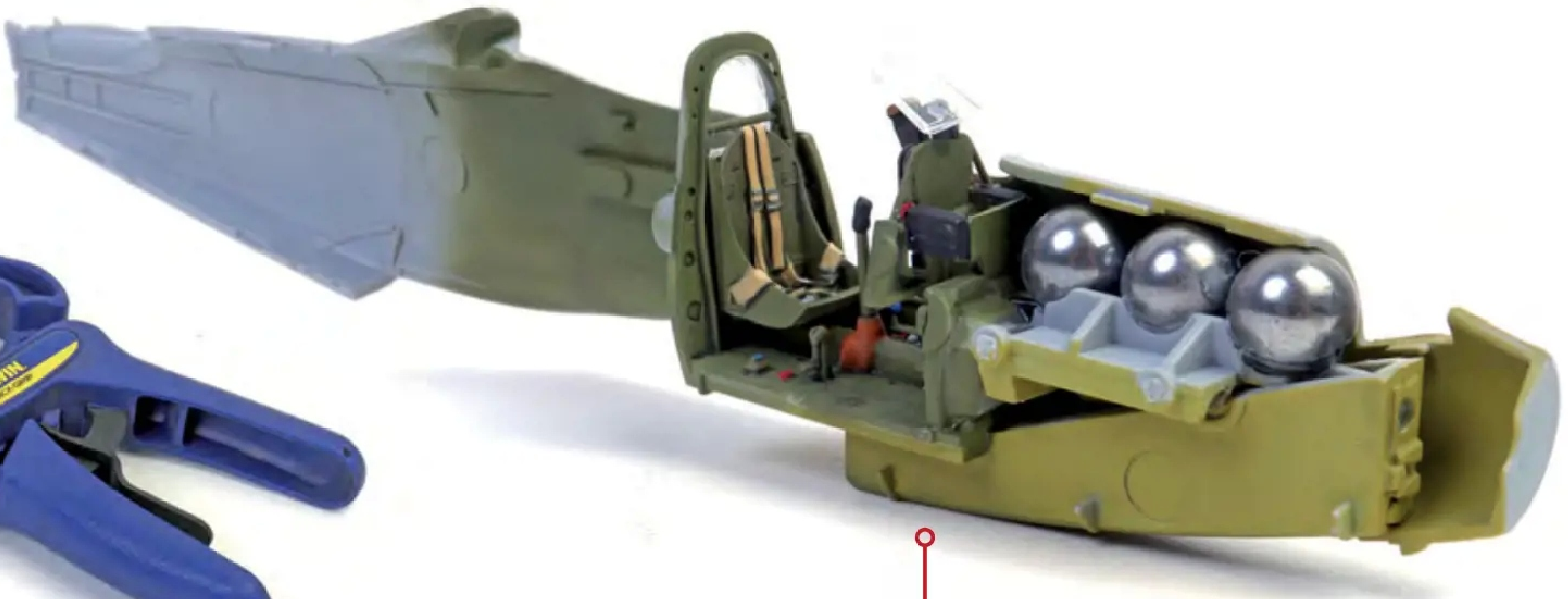


Arma Hobby supplies replacement scoops for two of the panels on the nose of the model.

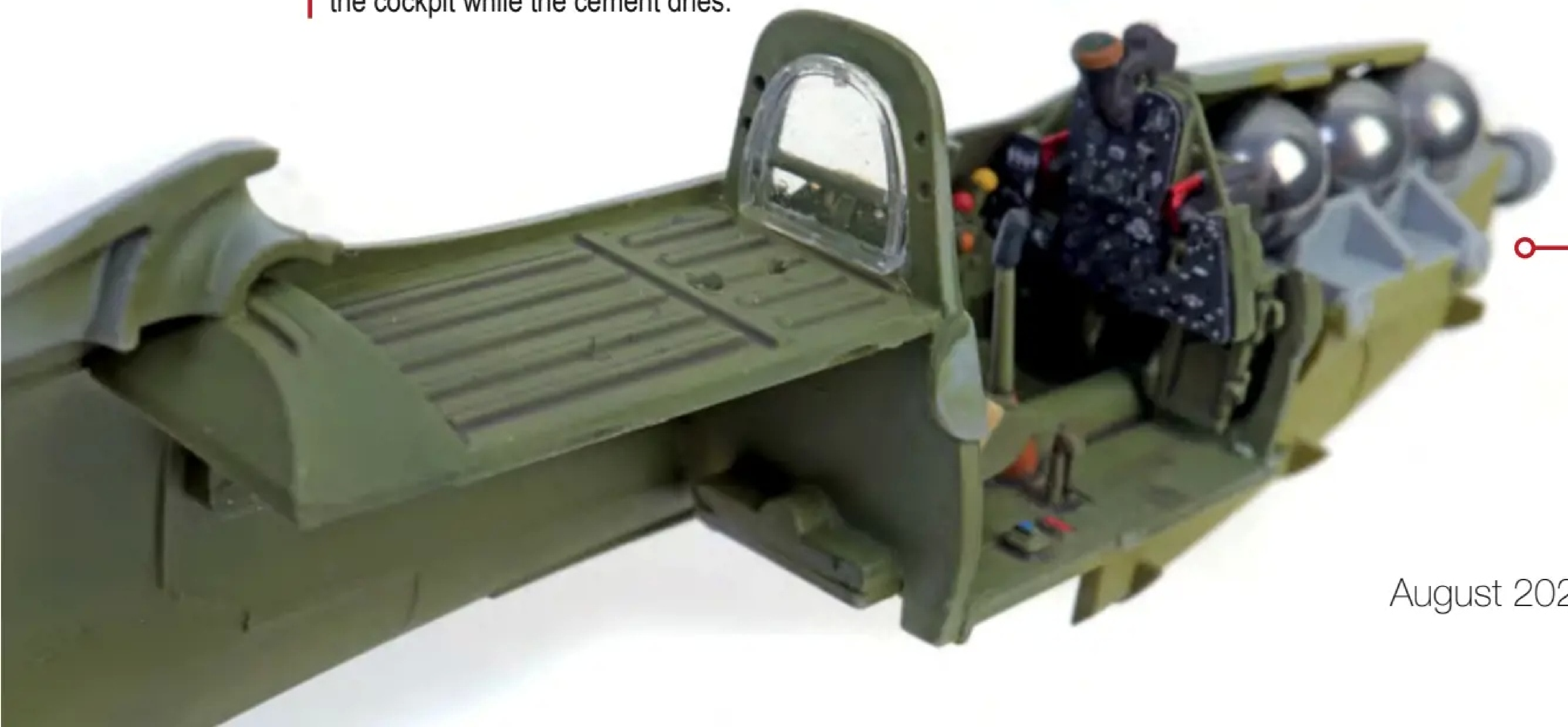


The tiny replacement resin scoops were glued into place facing the correct direction.

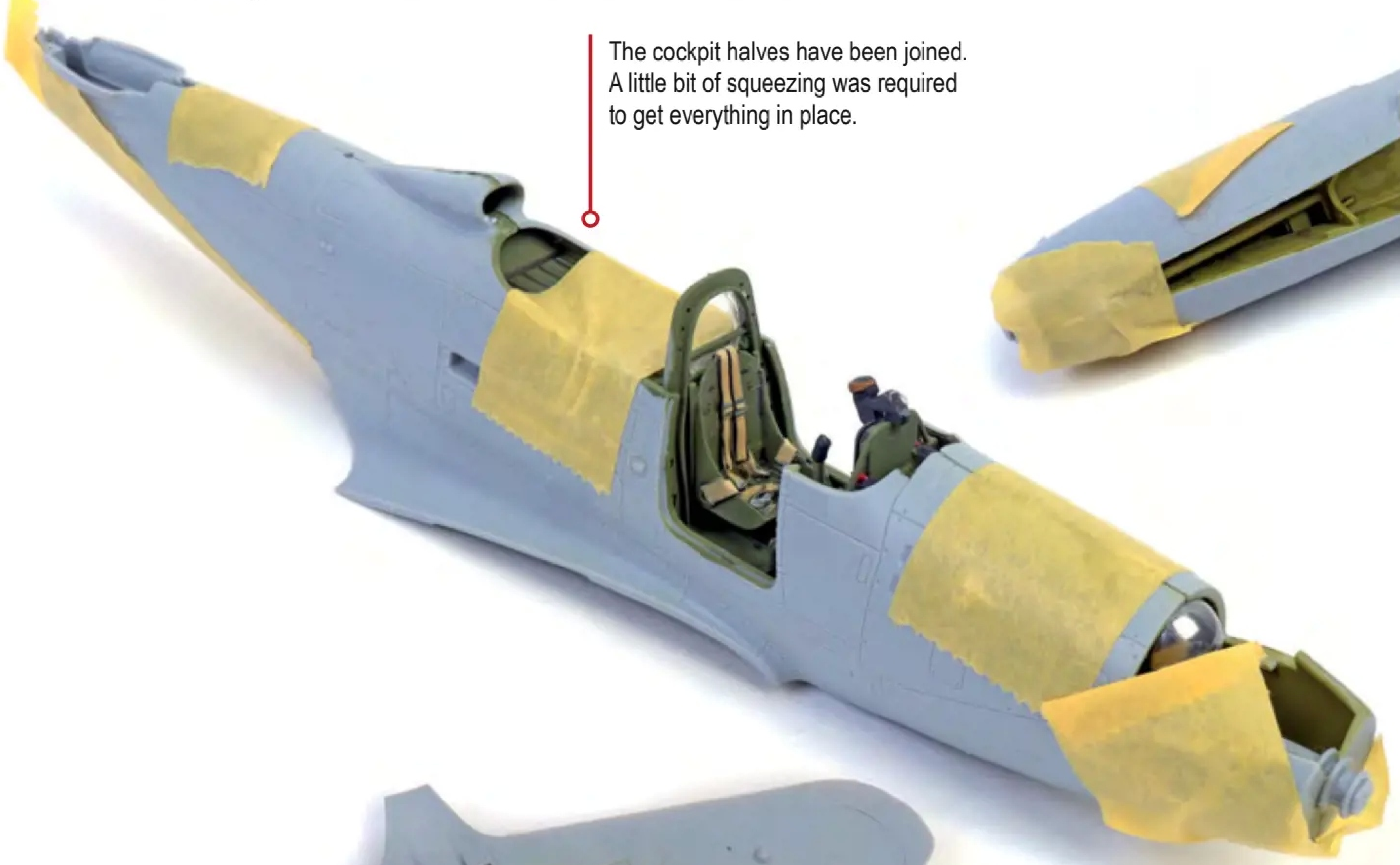
There's always a job for an Irwin clamp. In this case it is holding the fuselage to the cockpit while the cement dries.



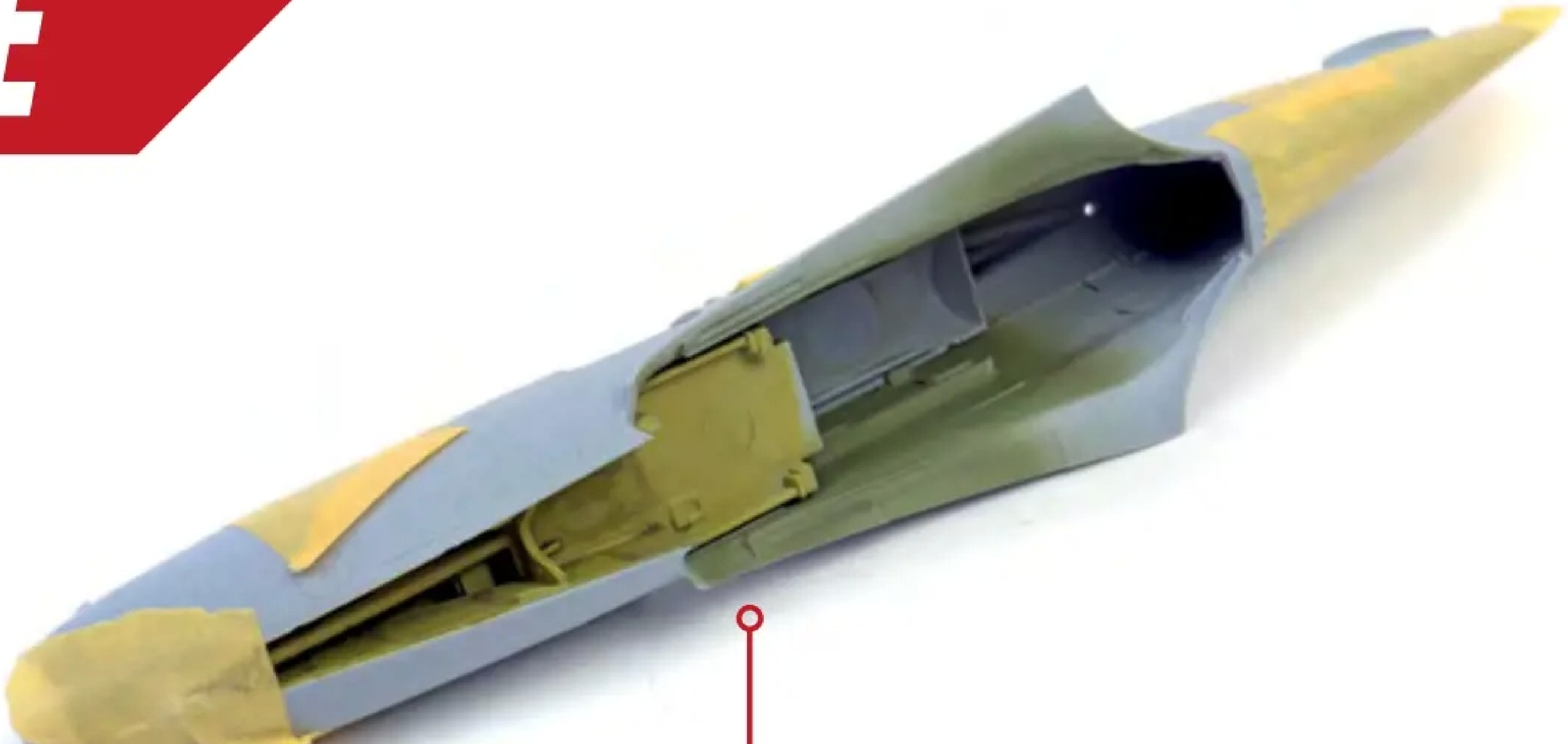
Here is what the interior should look like before the fuselage halves are sealed.



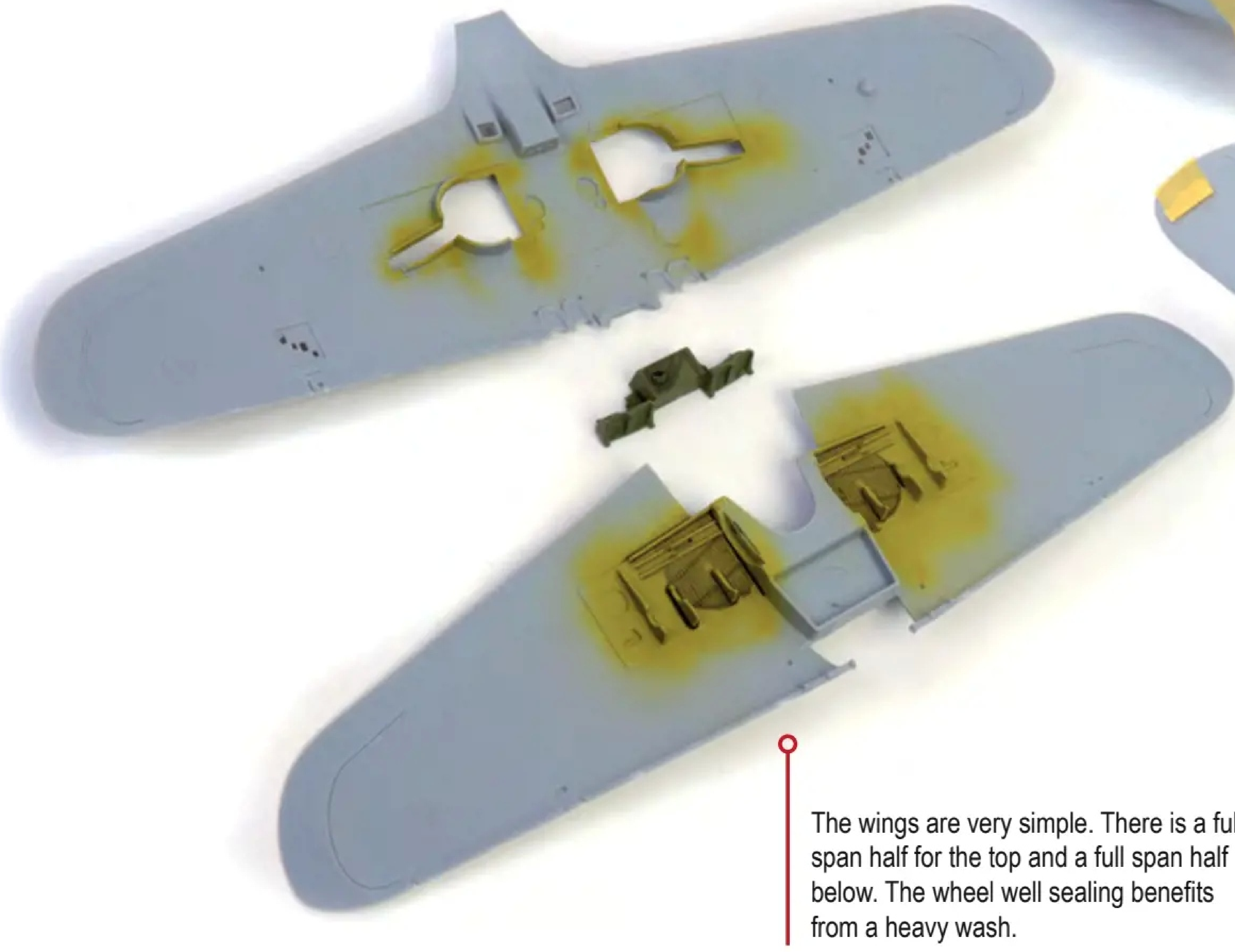
A view from the rear.



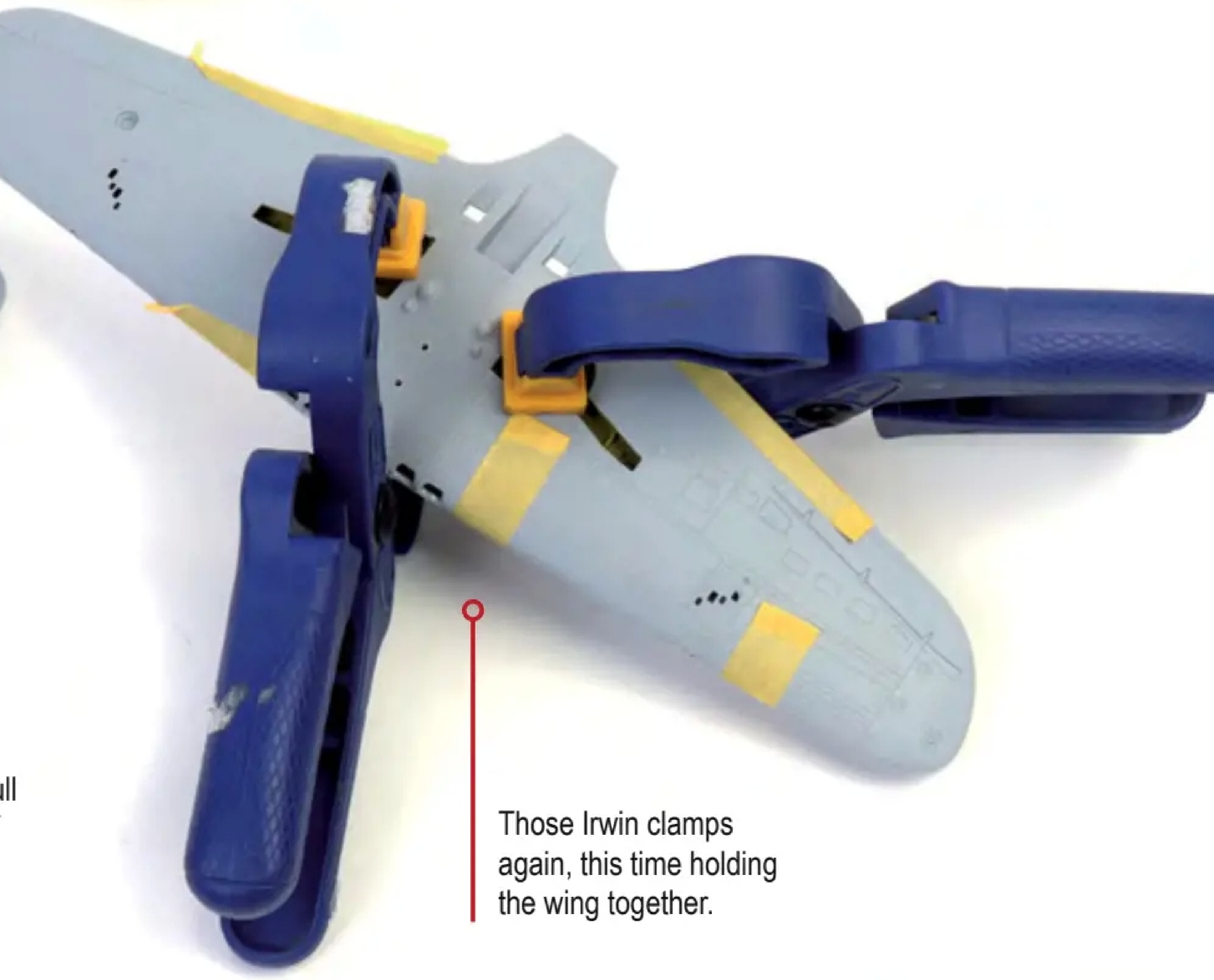
The cockpit halves have been joined. A little bit of squeezing was required to get everything in place.



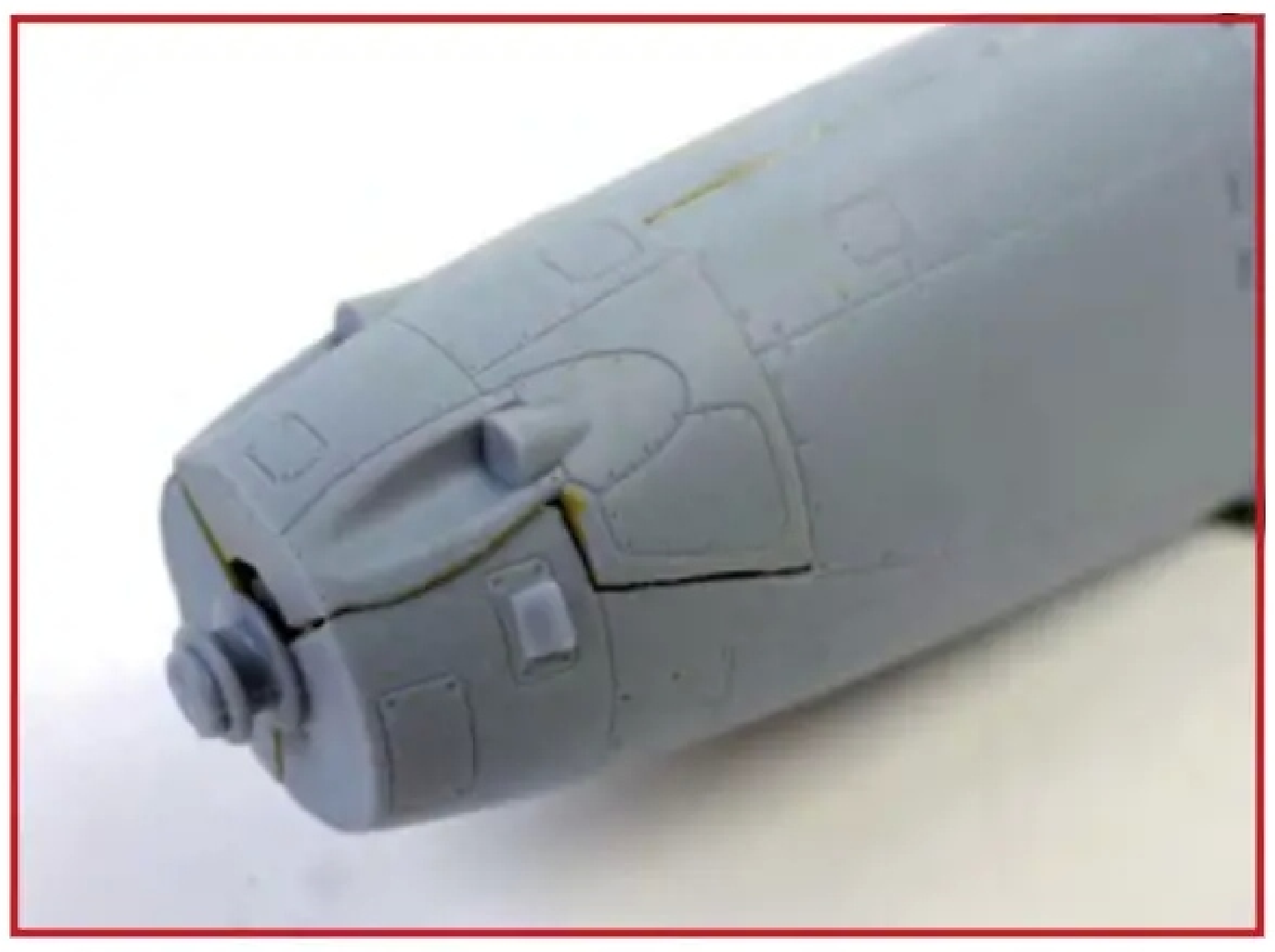
Here is the opening for the attachment of the wing.



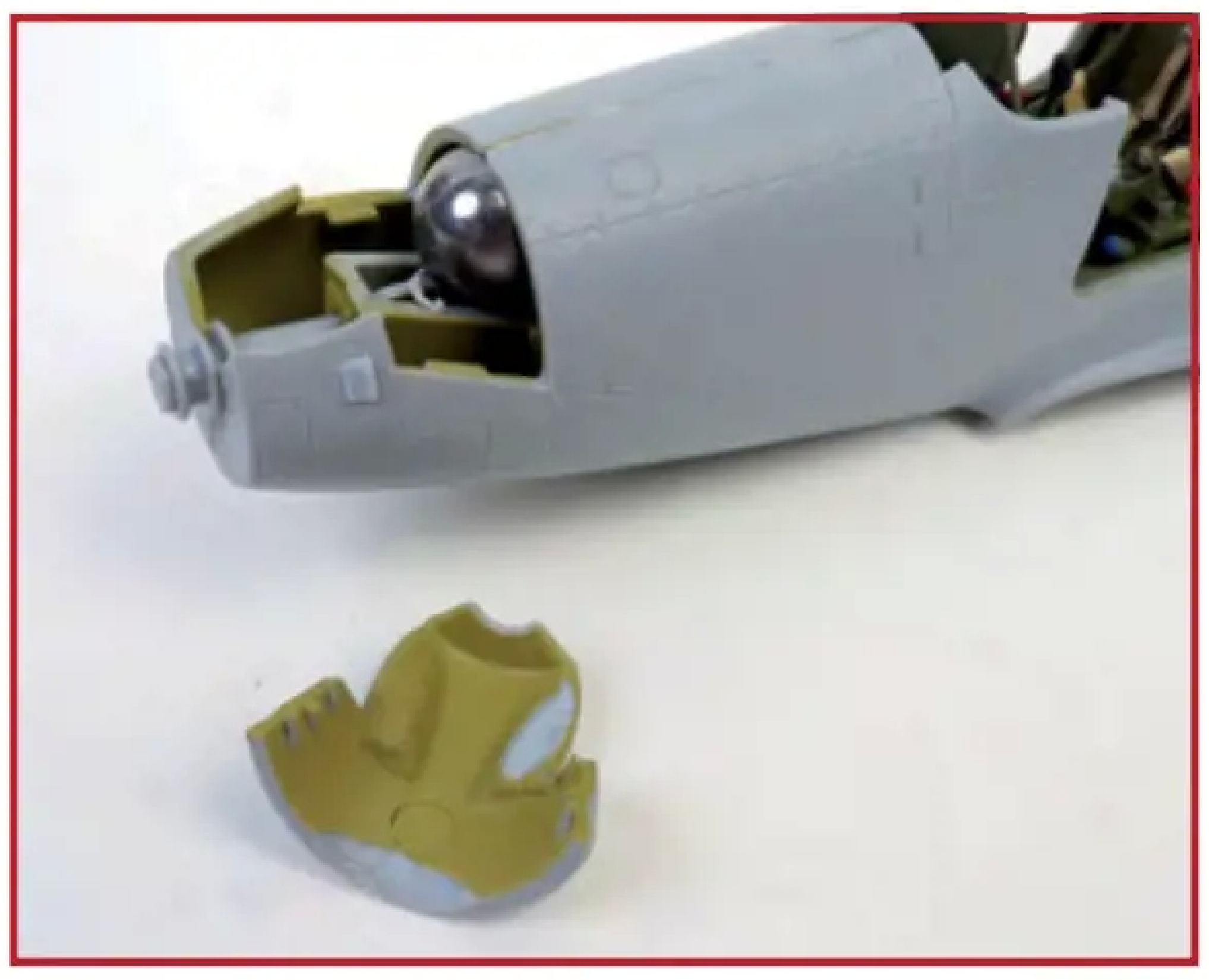
The wings are very simple. There is a full span half for the top and a full span half below. The wheel well sealing benefits from a heavy wash.



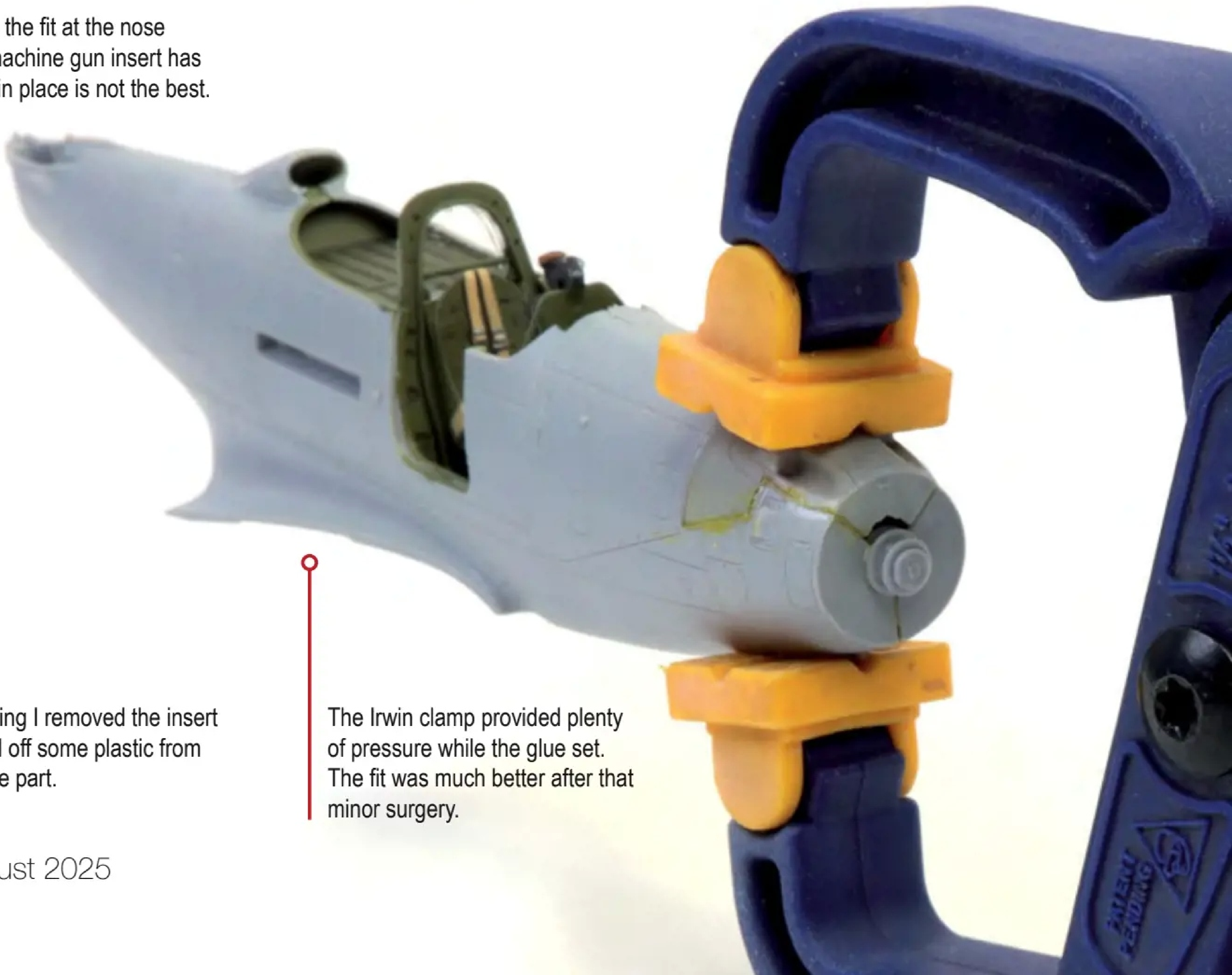
Those Irwin clamps again, this time holding the wing together.



Unmodified, the fit at the nose where the machine gun insert has been glued in place is not the best.



After test fitting I removed the insert and scraped off some plastic from the top of the part.



The Irwin clamp provided plenty of pressure while the glue set. The fit was much better after that minor surgery.

◀ The two side doors are moulded as clear parts. They may be posed open or closed. Note that pilot entry and egress was usually from the starboard side. Self-adhesive die-cut masks are supplied for the canopy and doors. This is a thoughtful and time saving touch.

A number of additional parts and unused options are included on the sprues.

Instructions are supplied as a 12 page stapled A5-sized booklet.

The kit is packed into an end-opening cardboard box with a thicker cardboard tray inside. This is very robust.

The kit decal sheet offers markings for three options with some colourful markings variations in camouflage and service nationality.

They are:

- P-39N Airacobra 42-18736. Cdt. Jean Machet de la Martinière, GC 1:4 Navarre commander. Reghaia airbase, Algeria, March 1944.
- P-39N Airacobra 42-18354. 345th Fighter Squadron, Sardinia-Corsica, spring 1944.
- P-39N Airacobra 42-9033 „White 01”. 100th Guards Fighter Regiment, pilots: Ivan Babak and Grigoriy Dol’nikov, 1943-1945 (two wariants)

Stencil markings are printed on the same single sheet, as are propeller logos and wing walk markings.

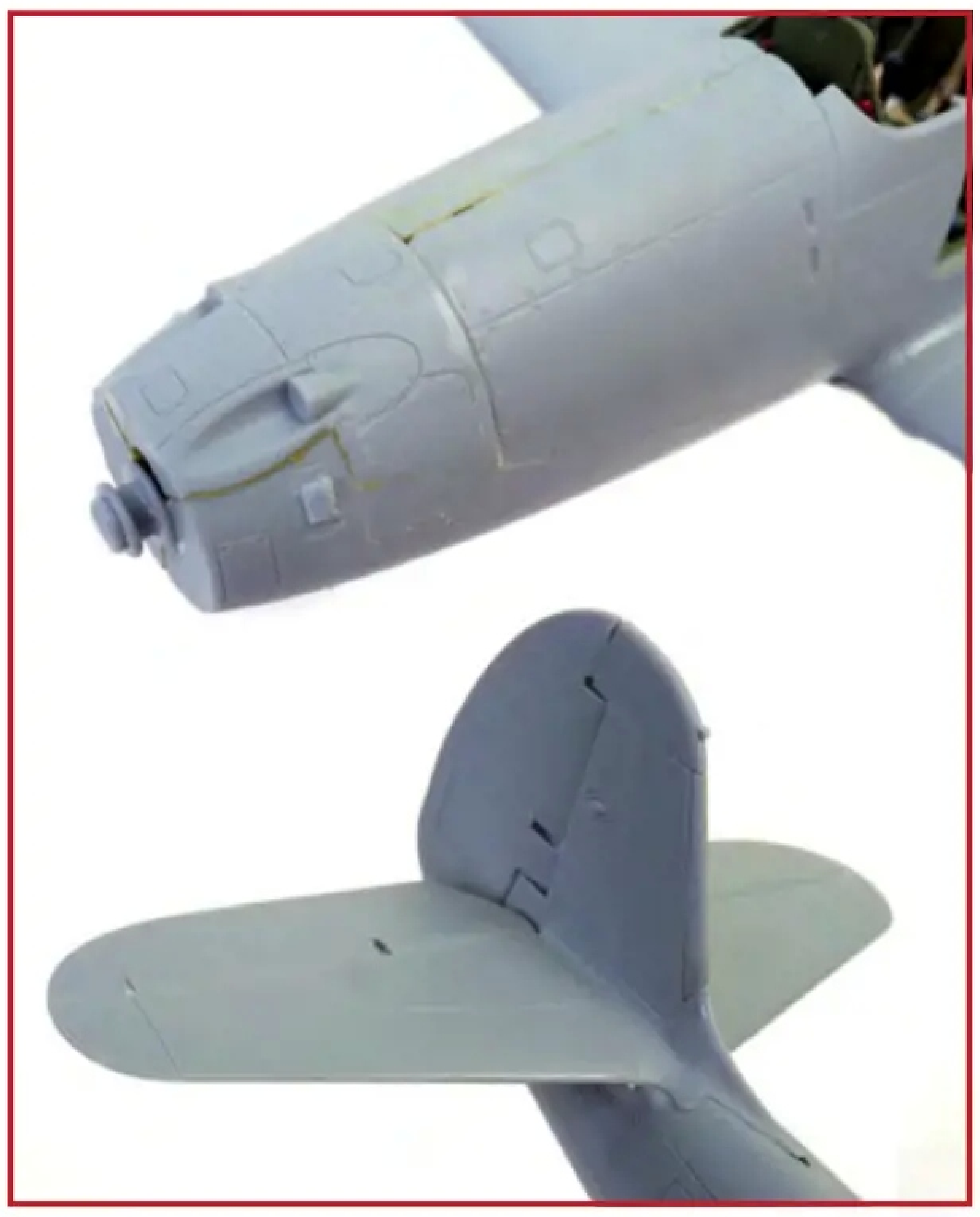
Decals are printed perfectly by Cartograf. They are glossy, colours are well saturated and everything is in perfect register.

Arma Hobby's follow-up 1:48 scale Airacobra, the P-39 N, is a gorgeous kit with its crisp surface textures, high moulding quality, thoughtful parts breakdown, useful options and very high level of detail.

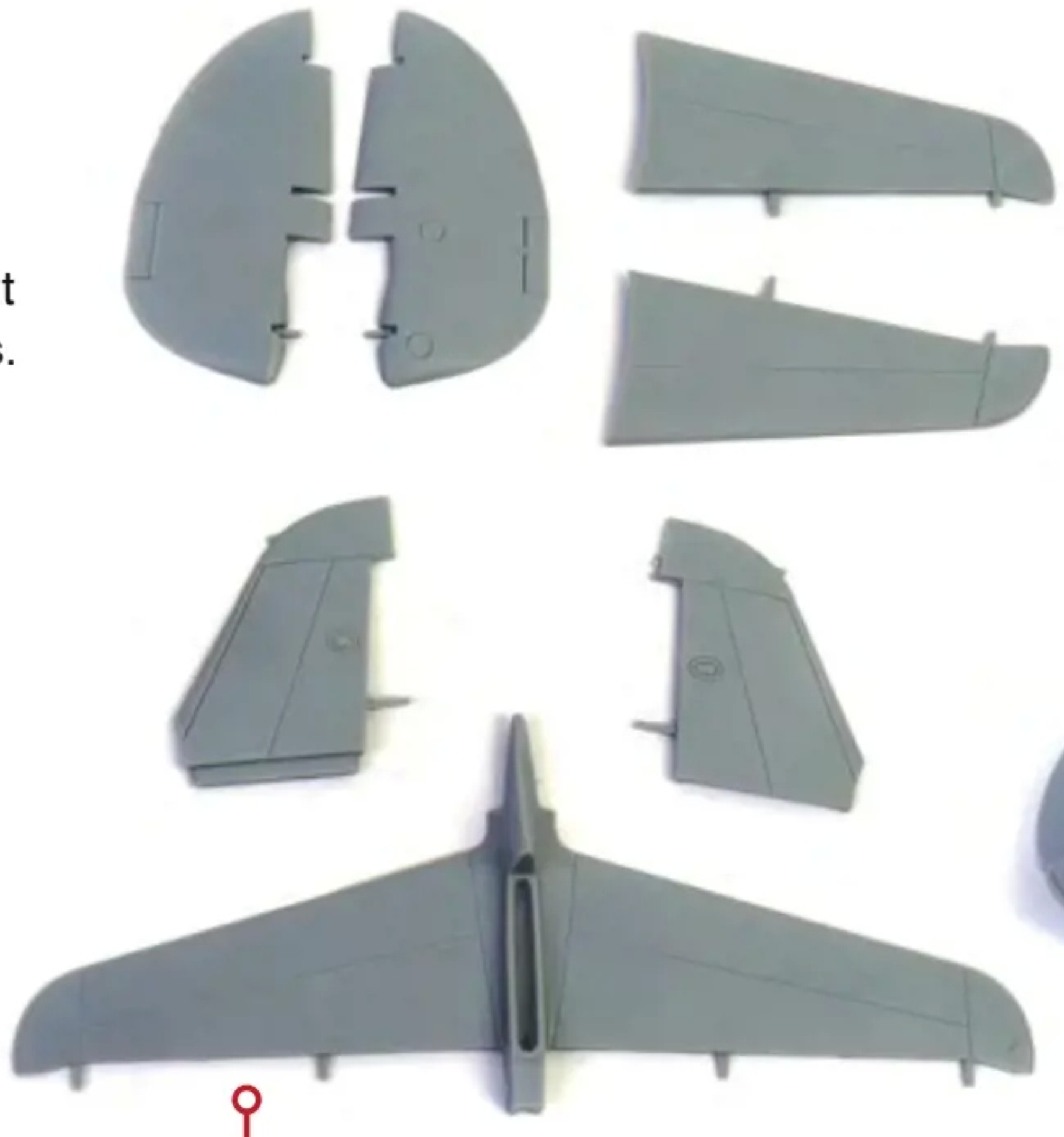
Although not all the options on the sprues are mentioned in the intructions, you will be able to build P-39D/P-400 to P-39N and Q variants straight from the parts in the box.

It's nice to see that Arma has addressed the sink marks on the top of the wings too.

This is a another excellent offering from Arma Hobby. ▶



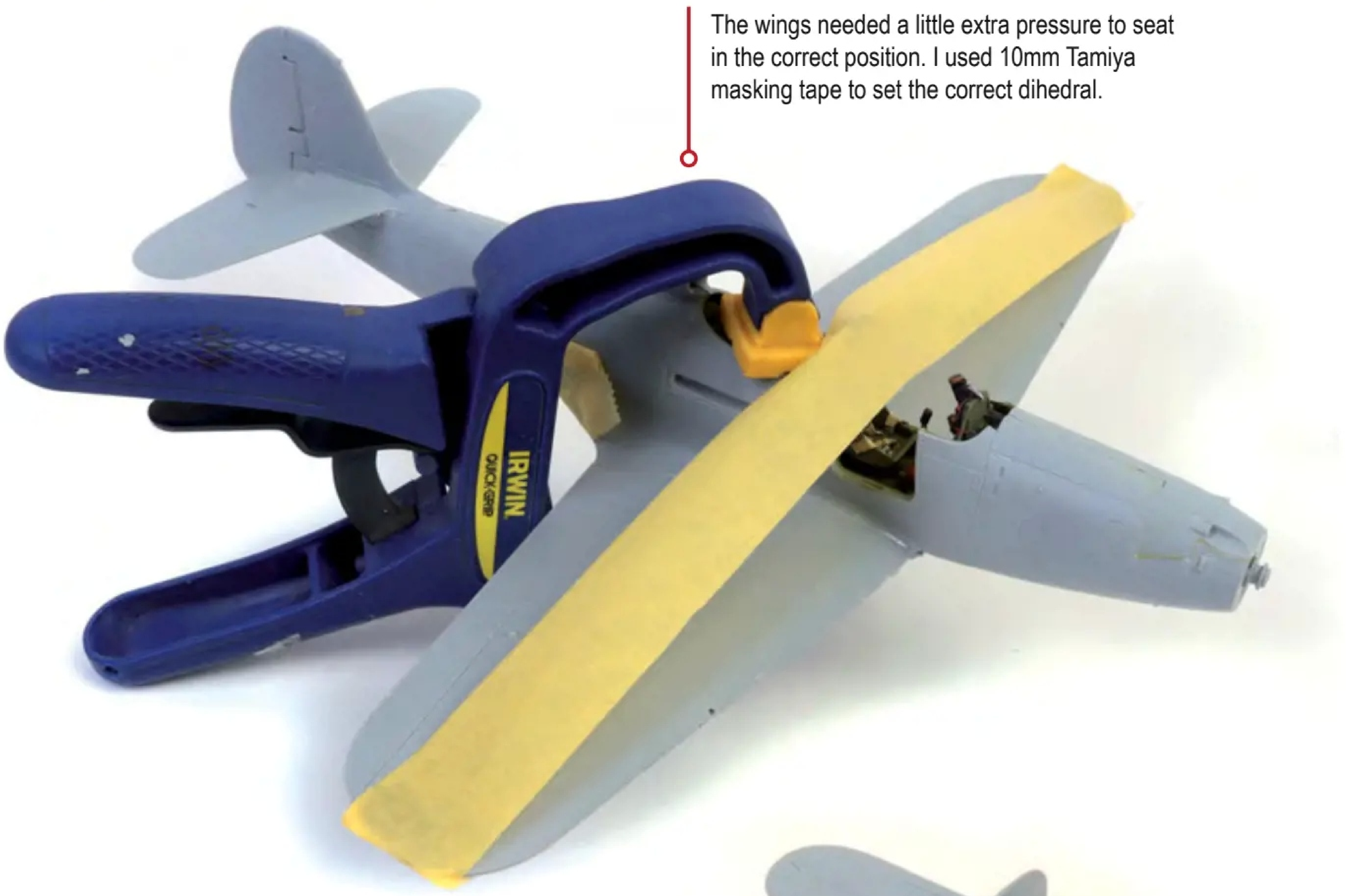
There were only a few minor gaps to deal with once the fuselage was together. A little bit of misalignment and a tiny gap at the front of the fin fillet.



The tail planes ready for assembly.

Panel lines are fine and recessed. Test fitting showed that I had to trim a little plastic from the upper fillet area.

The wings needed a little extra pressure to seat in the correct position. I used 10mm Tamiya masking tape to set the correct dihedral.



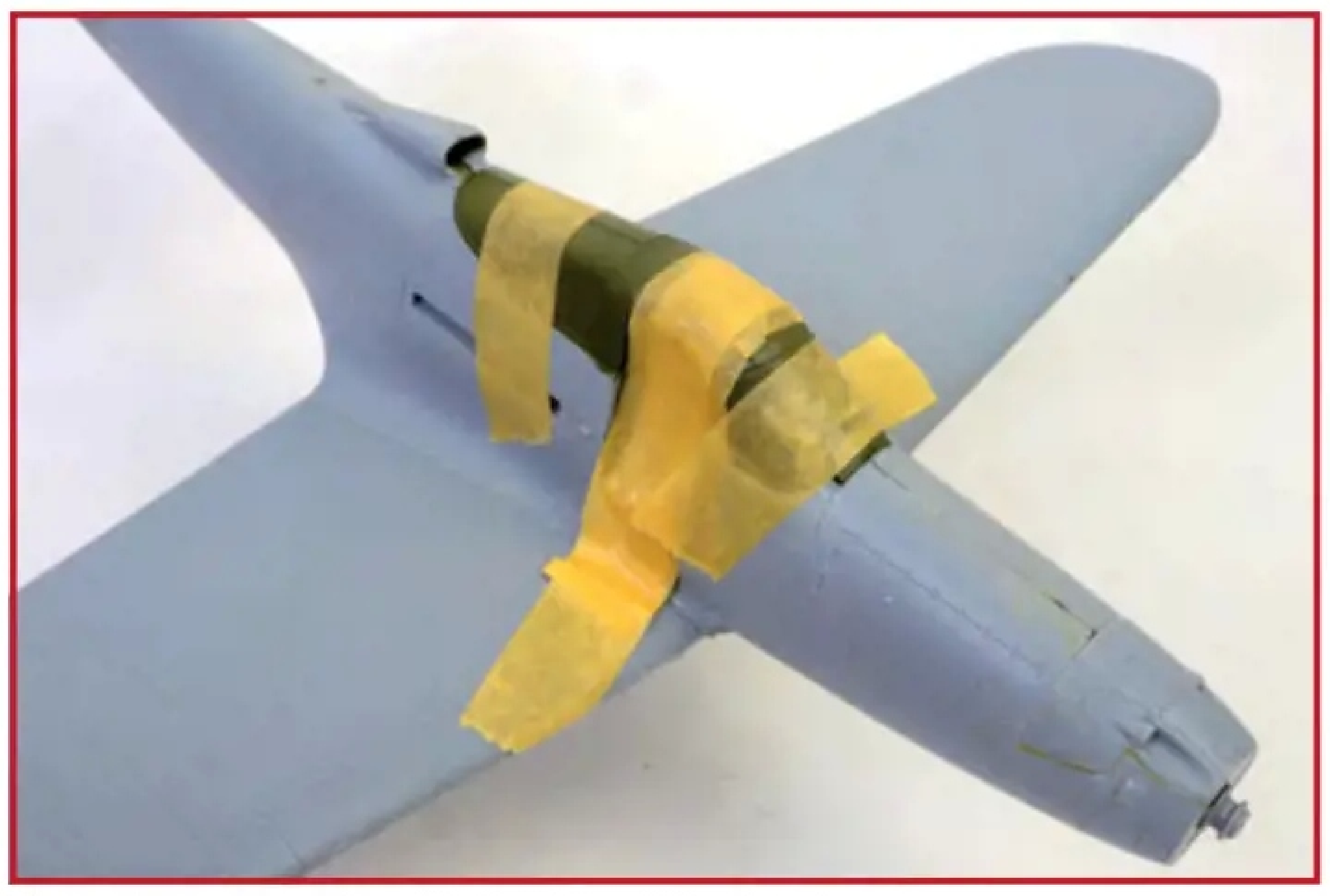
In the end, the fit was very good.

Arma Hobby 1:48 P-39N Airacobra • Kit No. 40011

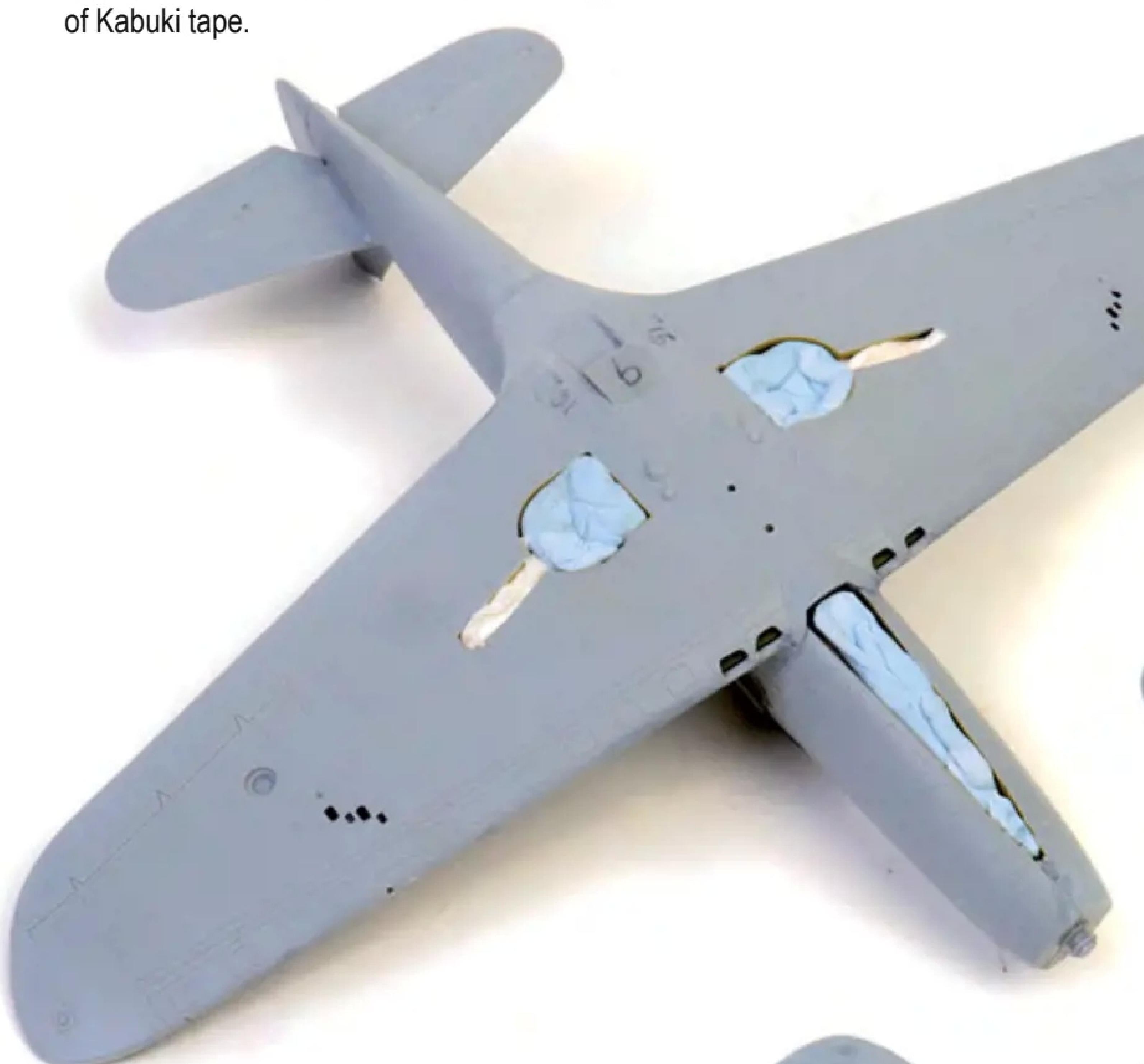
eduard
MASK
1/48
EX1067
P-39Q 1/48
EDUARD.CZ
DIE-CUT FLEXIBLE MASK
R SCALE PLASTIC KITS

Arma Hobby supplies canopy masks but unfortunately mine were not die cut. It was just a single square piece of Kabuki tape.

Eduard's mask set was used instead.



The canopy was glued to the top of the fuselage.

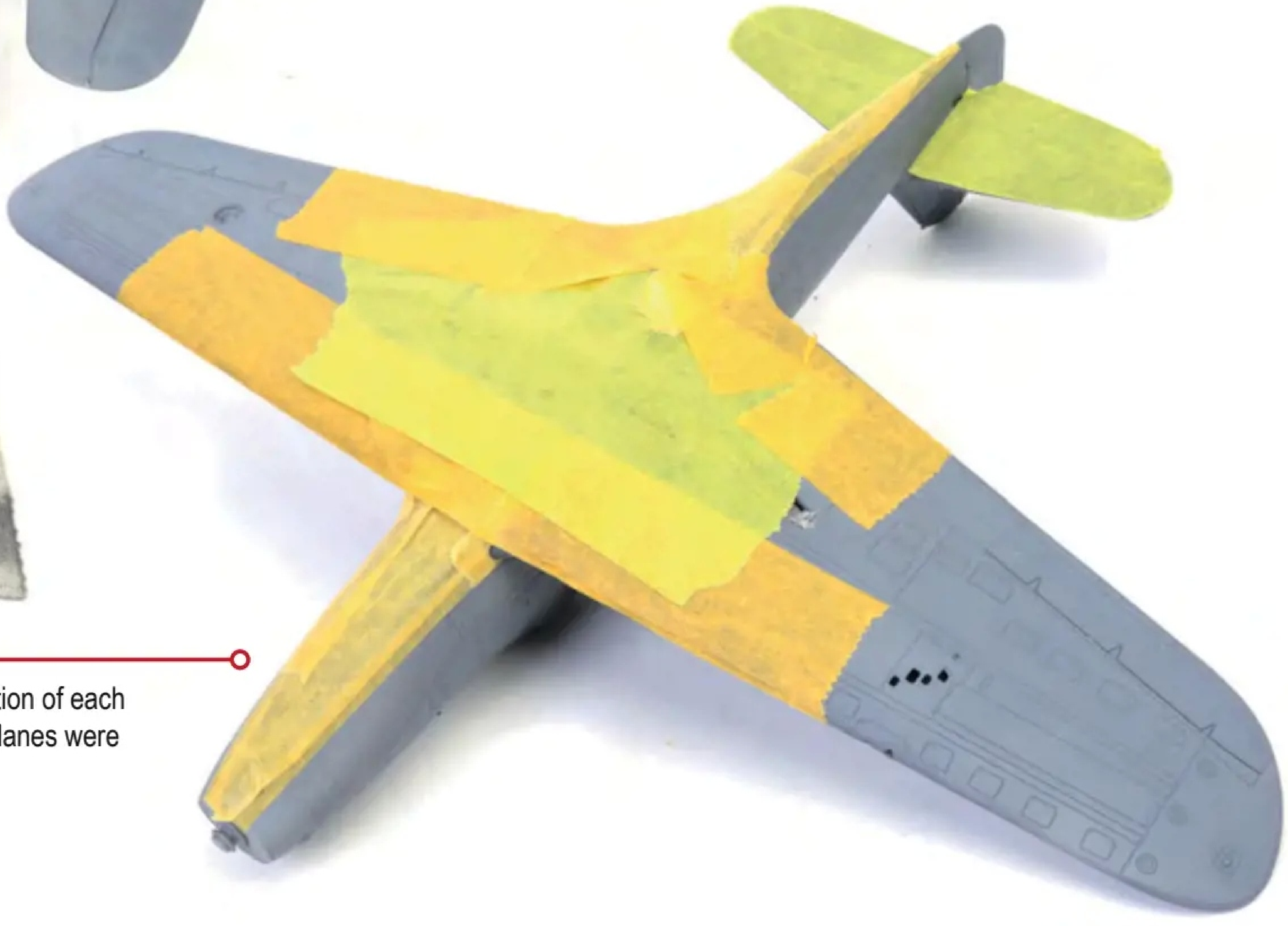


The wheel well openings were plugged before painting using blue tack and some small wads of damp tissue.

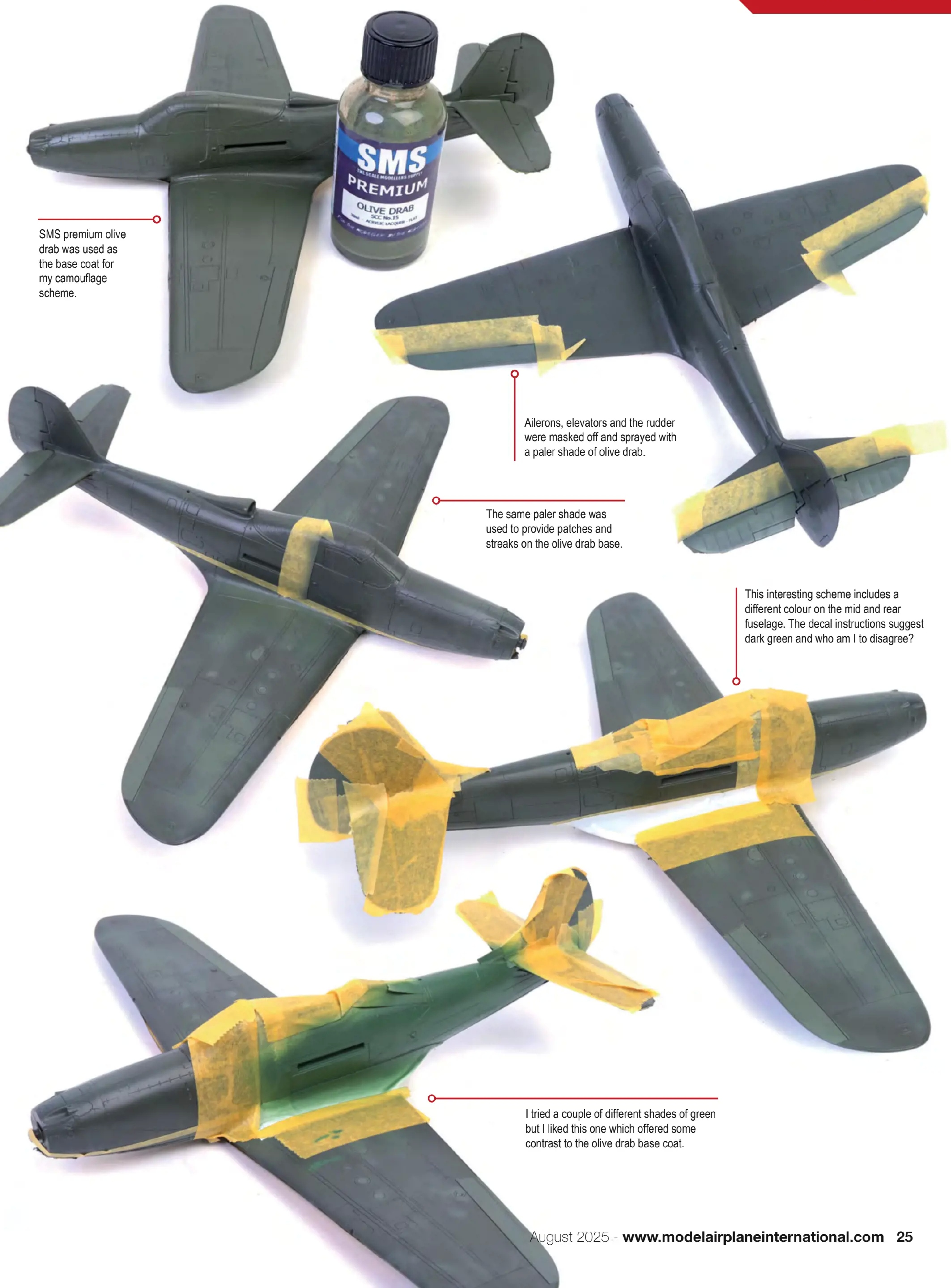
SMS
THE SCALE MODELLERS SUPPLY
SURFACER
GREY

SMS surfacer grey was used as the primer coat on the model.

A light sanding with 4000 grit micro mesh delivered a perfectly smooth surface.



The lower surface demarcations and a section of each wing plus the bottom of the horizontal tail planes were masked with Tamiya tape before painting.


SMS
THE SCALE MODELLERS SUPPLY
PREMIUM
OLIVE DRAB
SCC No.15
ACRYLIC LACQUER · FLAT

SMS premium olive drab was used as the base coat for my camouflage scheme.

Ailerons, elevators and the rudder were masked off and sprayed with a paler shade of olive drab.

The same paler shade was used to provide patches and streaks on the olive drab base.

This interesting scheme includes a different colour on the mid and rear fuselage. The decal instructions suggest dark green and who am I to disagree?

I tried a couple of different shades of green but I liked this one which offered some contrast to the olive drab base coat.

Arma Hobby 1:48 P-39N Airacobra • Kit No. 40011

The base coat on the bottom of the model was Tamiya XF-53 neutral grey with a couple of paler shades. This was a mix of neutral grey and Tamiya's XF-83 medium sea grey 2 RAF.

Next up was highlighting of panel lines and oil exhaust streaks.

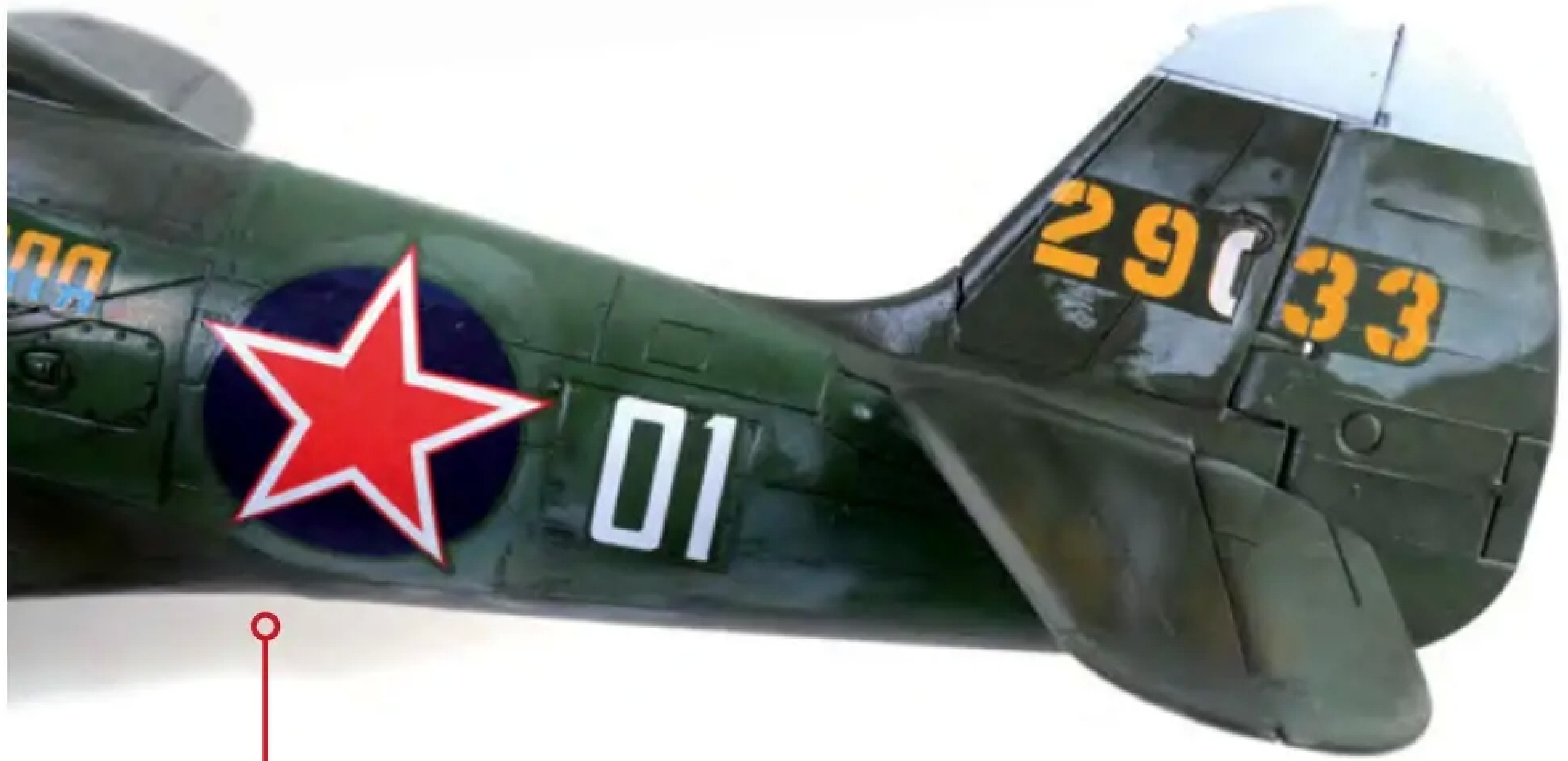
> *"Fit was generally very good but a little bit of wrestling was required to get the fuselage halves closed and the wing in the correct position. In the end though the result was very good..."*

pledge
FLOOR CARE
FINISH

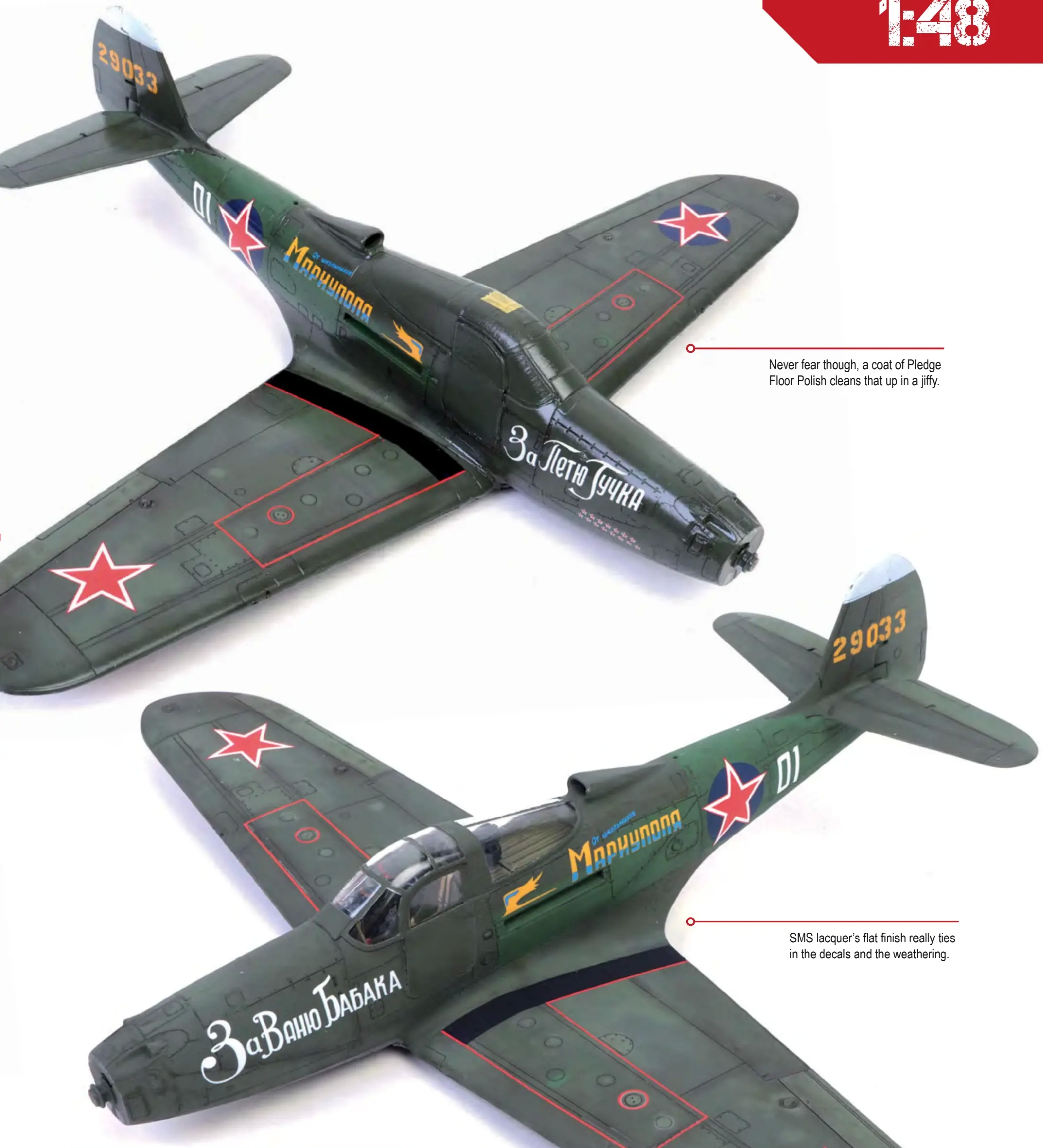
My Future was replaced with Pledge Floor Care Finish. This seems to do as good a job as the old trusty future bottle.

PANEL LINE ACCENT COLOR
(DARK BROWN)

Tamiya's oil-based panel line accent colour dark brown was brushed onto the surfaces of the model and wiped off with a fingertip before it dried.

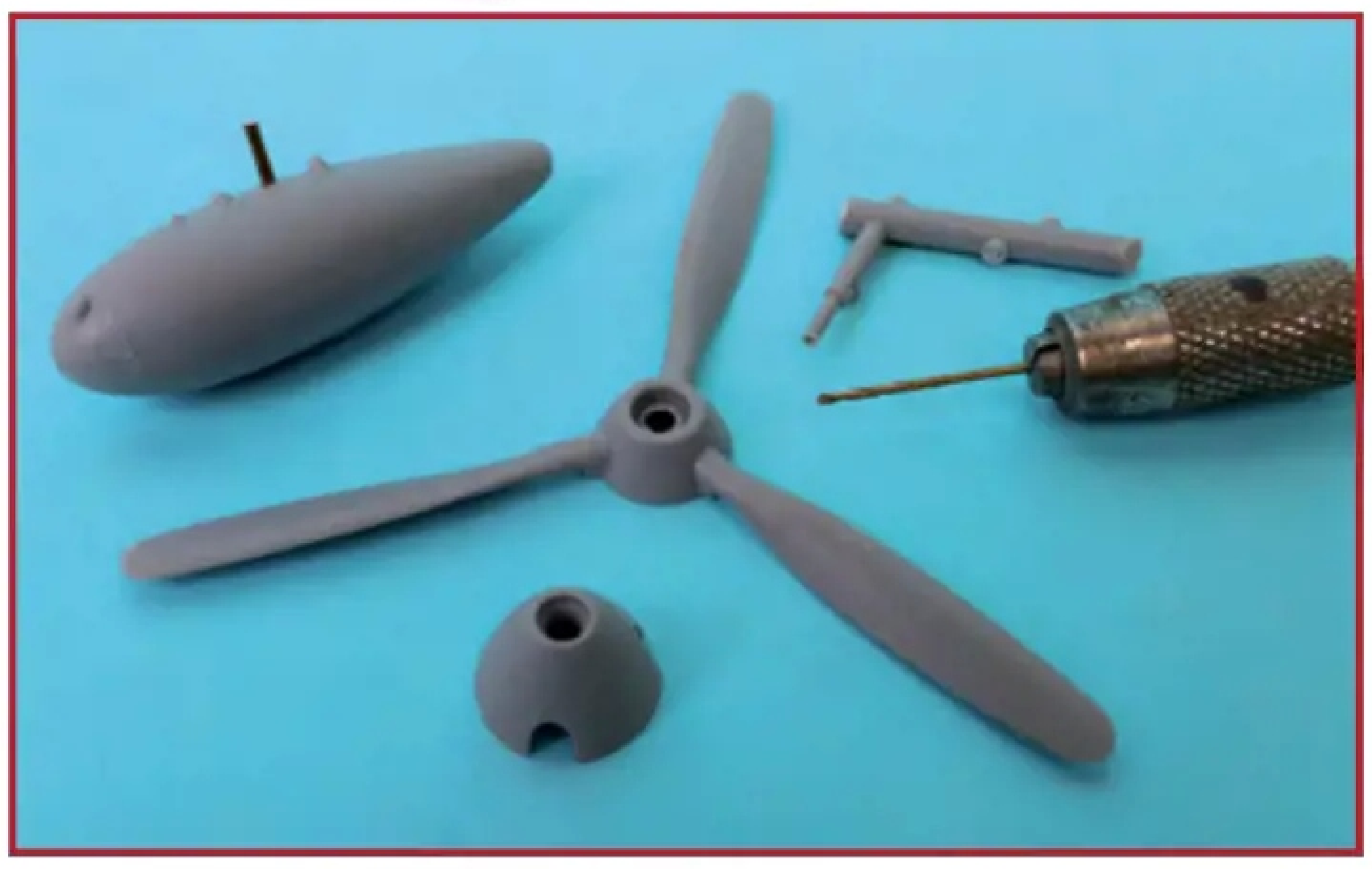


The decal setting solution left a terrifying white residue around most of the important markings.



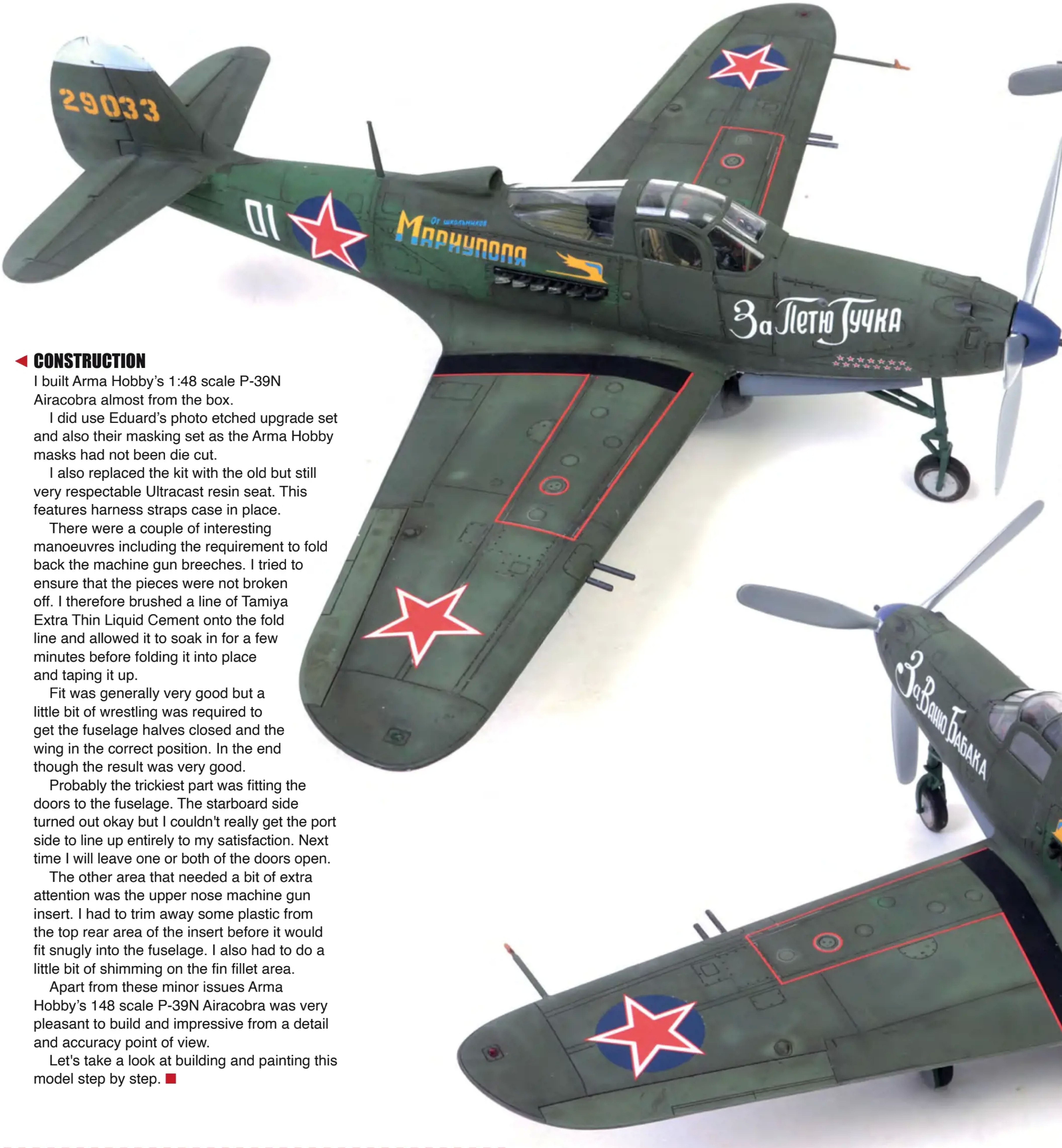
Never fear though, a coat of Pledge Floor Polish cleans that up in a jiffy.

SMS lacquer's flat finish really ties in the decals and the weathering.



The hub mounted cannon was drilled out with a fine pin vice. A more secure mount was made from copper brass strip drilled into the drop tank. I built Armour's 148 scale P39N Airacobra without too many changes or upgrades.

Arma Hobby 1:48 P-39N Airacobra • Kit No. 40011



CONSTRUCTION

I built Arma Hobby's 1:48 scale P-39N Airacobra almost from the box.

I did use Eduard's photo etched upgrade set and also their masking set as the Arma Hobby masks had not been die cut.

I also replaced the kit with the old but still very respectable Ultracast resin seat. This features harness straps case in place.

There were a couple of interesting manoeuvres including the requirement to fold back the machine gun breeches. I tried to ensure that the pieces were not broken off. I therefore brushed a line of Tamiya Extra Thin Liquid Cement onto the fold line and allowed it to soak in for a few minutes before folding it into place and taping it up.

Fit was generally very good but a little bit of wrestling was required to get the fuselage halves closed and the wing in the correct position. In the end though the result was very good.

Probably the trickiest part was fitting the doors to the fuselage. The starboard side turned out okay but I couldn't really get the port side to line up entirely to my satisfaction. Next time I will leave one or both of the doors open.

The other area that needed a bit of extra attention was the upper nose machine gun insert. I had to trim away some plastic from the top rear area of the insert before it would fit snugly into the fuselage. I also had to do a little bit of shimming on the fin fillet area.

Apart from these minor issues Arma Hobby's 148 scale P-39N Airacobra was very pleasant to build and impressive from a detail and accuracy point of view.

Let's take a look at building and painting this model step by step. ■

> ***"Arma Hobby's 148 scale P-39N Airacobra was very pleasant to build and impressive from a detail and accuracy point of view..."***

За Ваню Бабака
От школьников Мариуполя
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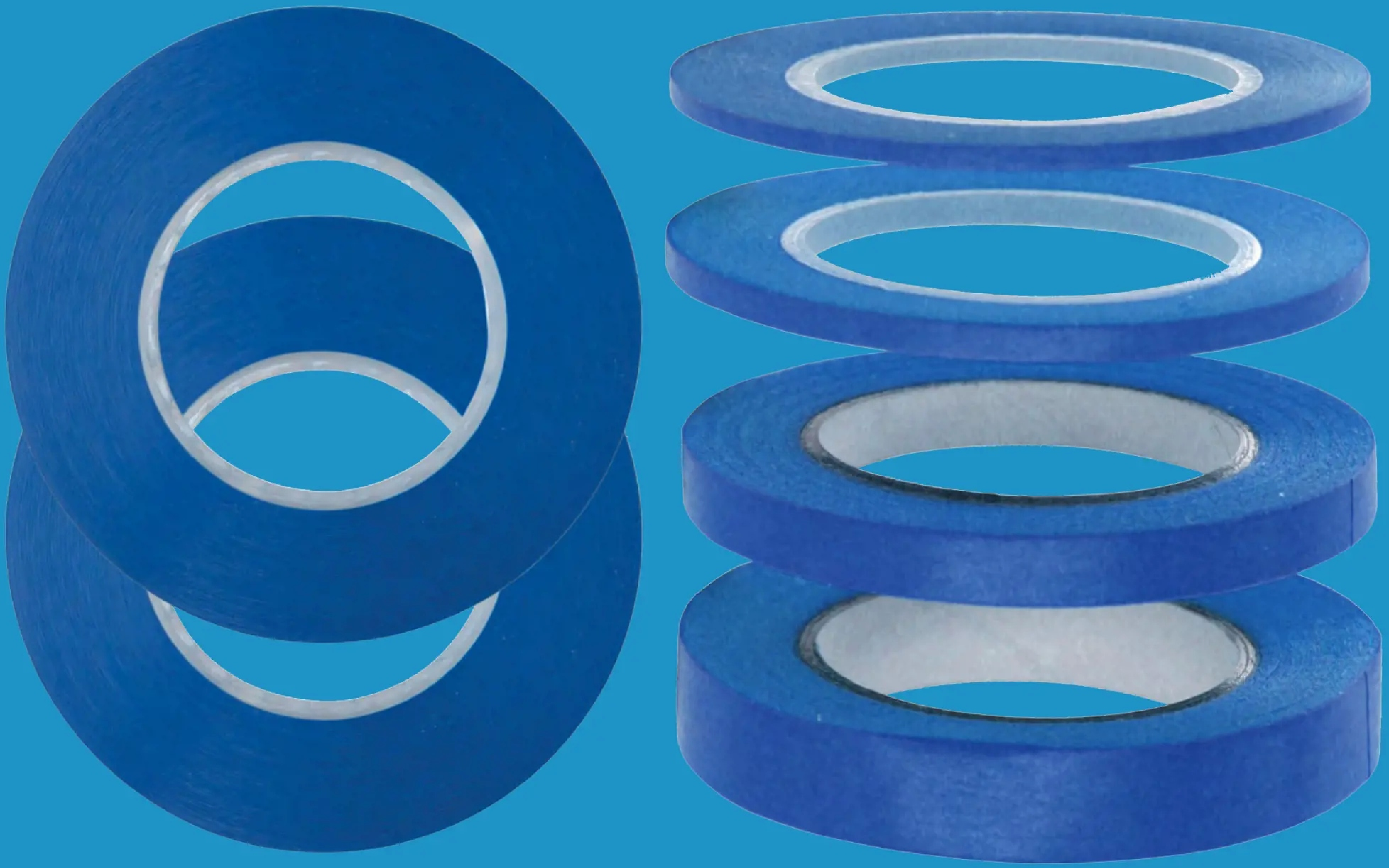

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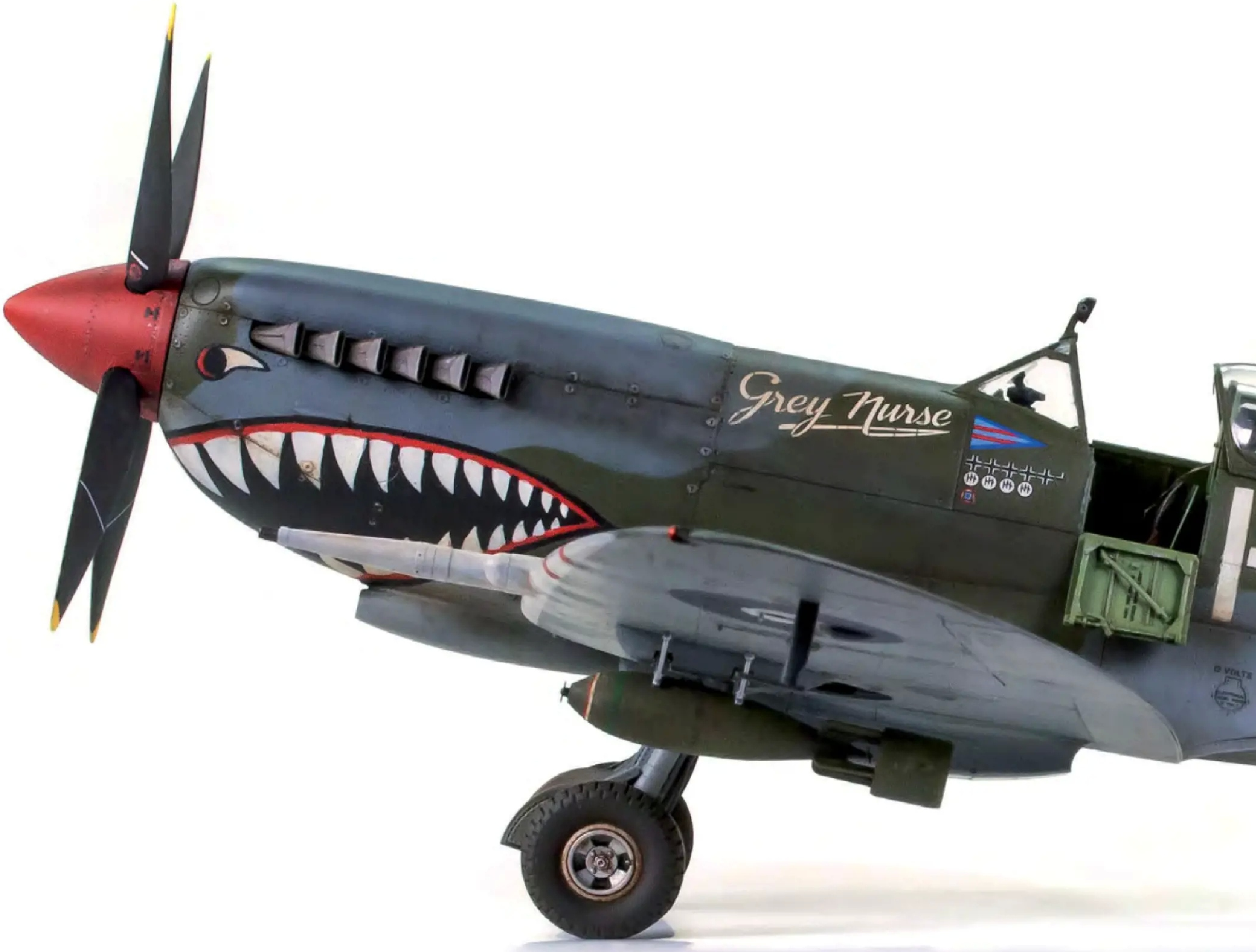
GREY NURSE

PART TWO - MASKING AND PAINTING UNDERW

Mark Casiglia masks and starts painting his Tamiya 1:32 Spitfire Mk VIII.

For the spinner, I chose Mr Color C327 Red FS 11136 as it has less brightness and more depth than a pure red. I trial fitted the hub and found that the troublesome cowl panels had delivered another issue. There were gaps in the fit and I realised the solution would be to trim away any interferences until the fit was flush. Initially I tried to eyeball the adjustments needed but it soon occurred to me that the propeller hub could be useful. I cut a hole in a piece of 1200 grit sandpaper and using the propeller hub as a sanding block, the front edges of the cowlings were soon flush and level. With this, the airframe was now ready for painting.

The propeller blades were painted by first completing the yellow tips using Mr Color C58 Orange Yellow. Over black primer, I first painted some XF-20 Medium Grey to help the yellow build up colour density. In hindsight pink would have been a better base shade and I ended up revising the yellow tips after the main paintwork was done to increase the richness of the colour. After masking the yellow tips using the width of the kit decals as the guide, the main blades were painted in LP-3 Flat Black followed by highlighting in AK Real Colors RC071 Black 6RP which is a very dark grey. Finally, through an Uschi spatter mask, AK022 Rubber Black thinned heavily with Mr Levelling Thinner was sparingly applied to give some light texture. Thinking I had done



AY

enough, I went ahead and glued the hub and spinner to the blades, but I soon realised that most Spitfires operating in the Pacific had very worn leading edges, exposing the brass strip edge of the laminar timber Rotol propellers. To replicate this, I masked the edges to the thickness of the brass strip and dry brushed in X-12 Golf Leaf enamel paint, purposely being heavy handed in some areas to show total exposure of the brass strip, adding further to this effect with brush painting. To further enhance the finish I used my stitching awl to poke out some rivet holes in the most exposed areas around the back edge of the brass strips. To finish the propeller blades, I masked and airbrushed the fine white horizontal lines on the back surfaces rather than using the provided decal. ▶

SPECIFICATION:

Tamiya 1:32 Spitfire Mk VIII. Kit No. 60320

MATERIALS USED:

- Tamiya Extra Thin Cement
- Revell Contacta Cement
- VMS Flexi 5K CA
- Ammo Black Slow Dry CA
- Ammo Ultra Glue
- VMS Transpa Fix 6K
- Dental composite resin
- Dental curing light
- Evergreen sheet styrene
- VMS CA filler
- Mr Masking Sol Neo
- Tamiya masking tape, all widths
- Oramask 810 adhesive vinyl
- Ammo Softouch Velvet masking sheet
- Ammo washi masking sheet
- Car trim chrome tape
- Yamaha saxophone pad cleaning paper
- Infini Easycutting Type A mat
- VMS Set & Fix
- Walther's Solvaset

PAINTS AND FINISHING PRODUCTS USED:

- Mr Surfacer 1500 Black
- Mr Surfacer 1500 Grey
- Mr Surfacer 500 Grey
- Tamiya acrylic paint
- Tamiya lacquer paint
- Mr Color lacquer paint
- Mr Hobby acrylic paint
- AK Real Colors lacquer paint
- Tamiya enamel paint
- Vallejo Model Color acrylic paint
- Molotow Liquid Chrome
- Vallejo pigment
- Vallejo airbrush flow improver
- Tamiya acrylic paint retarder
- Tamiya lacquer paint retarder
- Hairspray
- VMS Varnish Satin
- VMS Varnish Matt
- GX113 flat clear
- Mig of Ammo Oil Brusher
- Oil paints, various
- Odourless solvent
- Mr Weathering Color
- Uschi spatter mask

TOOLS:

- SMS ceramic scraper
- Tamiya Fine Craft Saw
- Number 11 Scalpel
- Stitching awl
- Tamiya files
- Vallejo diamond files
- Infini soft sanding sticks
- GodHand sanding blocks
- SMS sanding sticks
- Wet and dry sandpaper
- Tamiya Polishing Compounds
- Fibreglass pen
- Pin vice and drill bits
- Suture scissors
- Rubber tipped clothes pegs
- Wooden mini craft pegs
- Disposable biopsy punch
- Rubber clay sculpting tool
- Sable brush 00
- Assorted general brushes
- Disposable micro brushes
- Silhouette Portrait 2 cutter

AIRBRUSHES:

- Sparmax SP-20x 0.2mm airbrush
- Sparmax Max-4 0.4mm airbrush
- Hseng AS186 Air Compressor

◀ The main landing gear was completed with the assistance of BarracudaCast resin wheels. The kit wheels are rubber which isn't ideal to begin with, but they also lack the required tread pattern for the RAAF Pacific spitfires. The BR32010 set provides the correct Z-block 4 slot wheels. To mount them to the kit's landing gear, a pin vice with appropriate drill bit was used to deepen the hole in the resin wheel. The drill bit was mounted to the exact depth need for full insertion and to eliminate the risk of accidentally penetrating through the opposite side of the wheel. After black priming, the landing gear struts and wheel covers were painted in XF-83, while the wheel hubs were painted in LP-70 and masked with a circle cut from a template. The tyres were painted in RC071 with a dusting of RC022, being deliberately heavier with that lighter shade on the running surfaces. After removal of the masks and brush touching as needed, Vallejo 73.109 Natural Umber pigment was puddled around the joint between the metal hubs and rubber tyres, using odourless solvent as the carrier. Once set, VMS varnish was applied, Matt for the tyres and Satin for the metal hubs. The wheels were set aside for the closing stages whilst the struts were screwed securely onto the airframe. The gear bays were masked with sponge material and the struts were wrapped in Tamiya tape. With this, the entire airframe was given a coat of Mr Surfacer 1500 Black. After some final inspections and touch ups, the model was ready for painting.

I have most of the Tamiya range of acrylic paints so there wasn't going to be a problem getting the ones I needed for this project. I remember from a previous build that the green camouflage colour was referred to as Dark Green 2 and it was in the XF-80's range. So when I picked up XF-89 Dark Green 2 from the rack I thought I was good to go. It wasn't until later, after the paintwork was complete, that I realised I should have picked up XF-81 Dark Green 2 (RAF). An easy trap to fall into, and unfortunately I ended up at the wrong end of the coin-flip. Later, I realised Tamiya has a third Dark Green 2 in their line-up, XF-70. I really question the repeated use of that colour name, it certainly caused confusion in this case. The other upper camouflage colour was XF-82 Ocean Gray 2 (RAF) and the lower colour XF-83 Medium Sea Gray 2 (RAF).

To help with the camouflage, a friend pointed me to an online site called Hawaiian Air Depot which sells a selection of digital files for use with home cutters. The price was very modest and the product exceptional. I planned a two-phase paint process so my initial plan was to paint the upper camouflage in as close as possible to the correct position before adding shading textures. I cut masks from paper and used them as templates. Using XF-20 enamel I lightly dry-brushed the borders, before proceeding with typical black-basing mottled coats of XF-89 and XF-82 for the camouflage. The lower surfaces were airbrushed in the same manner, using XF-83. In between this process, I went ahead and painted the tailwheel assembly in the same colours used for the main landing gear and bays. This was then masked with tamiya tape. ▶

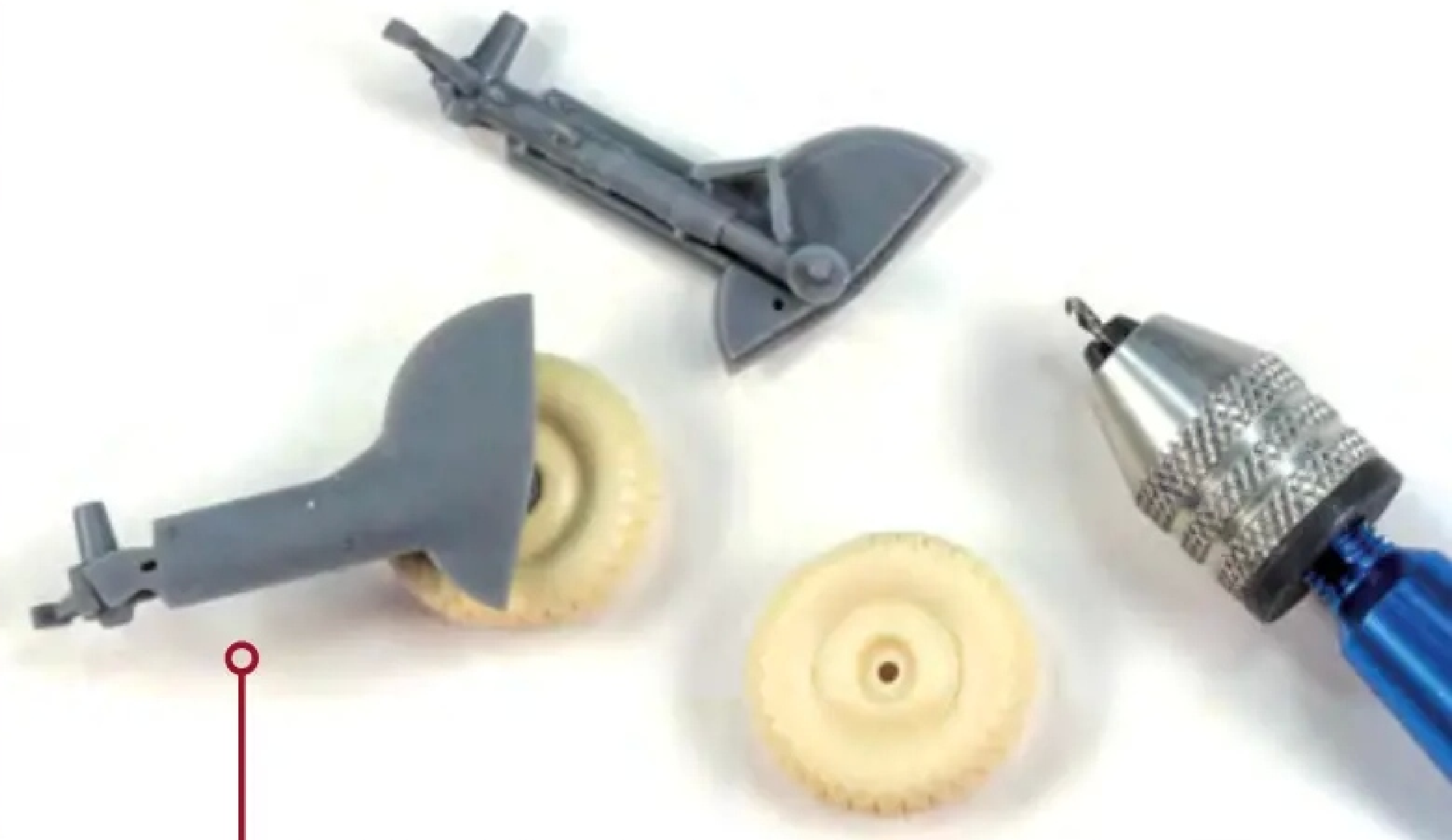
quickboost
QB 32 152
Spitfire Mk.IX
Cockpit's Door
1/32 scale

I chose a Quickboost QB 32152 resin cockpit door. Being so visible, the added sharpness and detail are definitely worth the investment

The finished cockpit door, to be put aside for the end of the project

BARRACUDACAST
www.barracudacast.com
BR32010
SPITFIRE Z-BLOCK 4 SLOT MAINWHEELS
1:32 SCALE
WHEN "GOOD ENOUGH" ISN'T GOOD ENOUGH

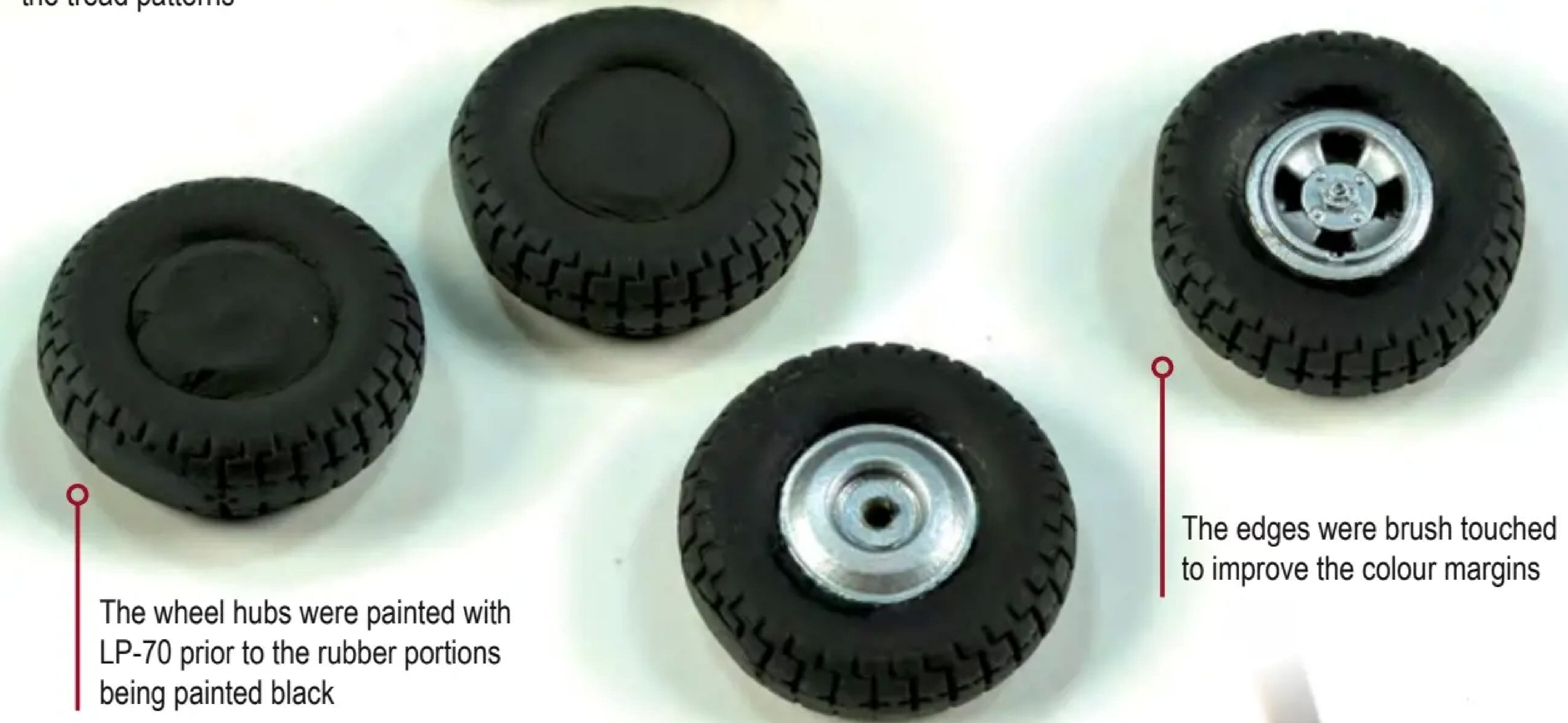
I chose BarracudaCast resin wheels since the kit wheels are smooth and therefore incorrect for RAAF versions. These Z-Block 4 slot wheels were perfect



The holes in the wheels weren't deep enough. Rather than shortening the posts on the kit parts and therefore weakening the joint, I drilled the holes in the resin wheels deeper. I mounted the drill bit at the exact depth t break through to the other side of the wheel

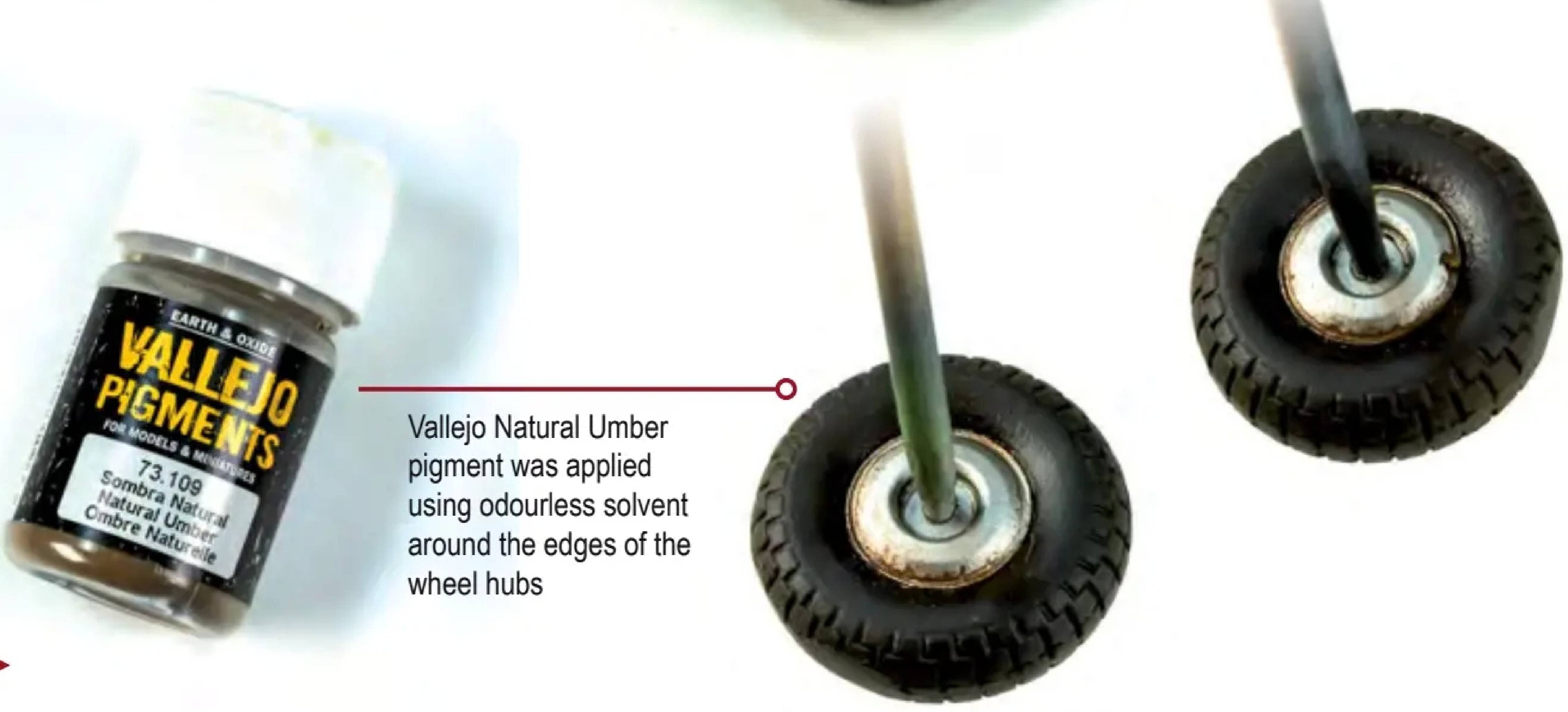
BLACK 6RP
AK
RUBBER BLACK
AK

AK Real Colors RC071 Black 6RP was used as the base shade for the wheels, with RC022 Rubber Black used to highlight the tread patterns



The wheel hubs were painted with LP-70 prior to the rubber portions being painted black

The edges were brush touched to improve the colour margins

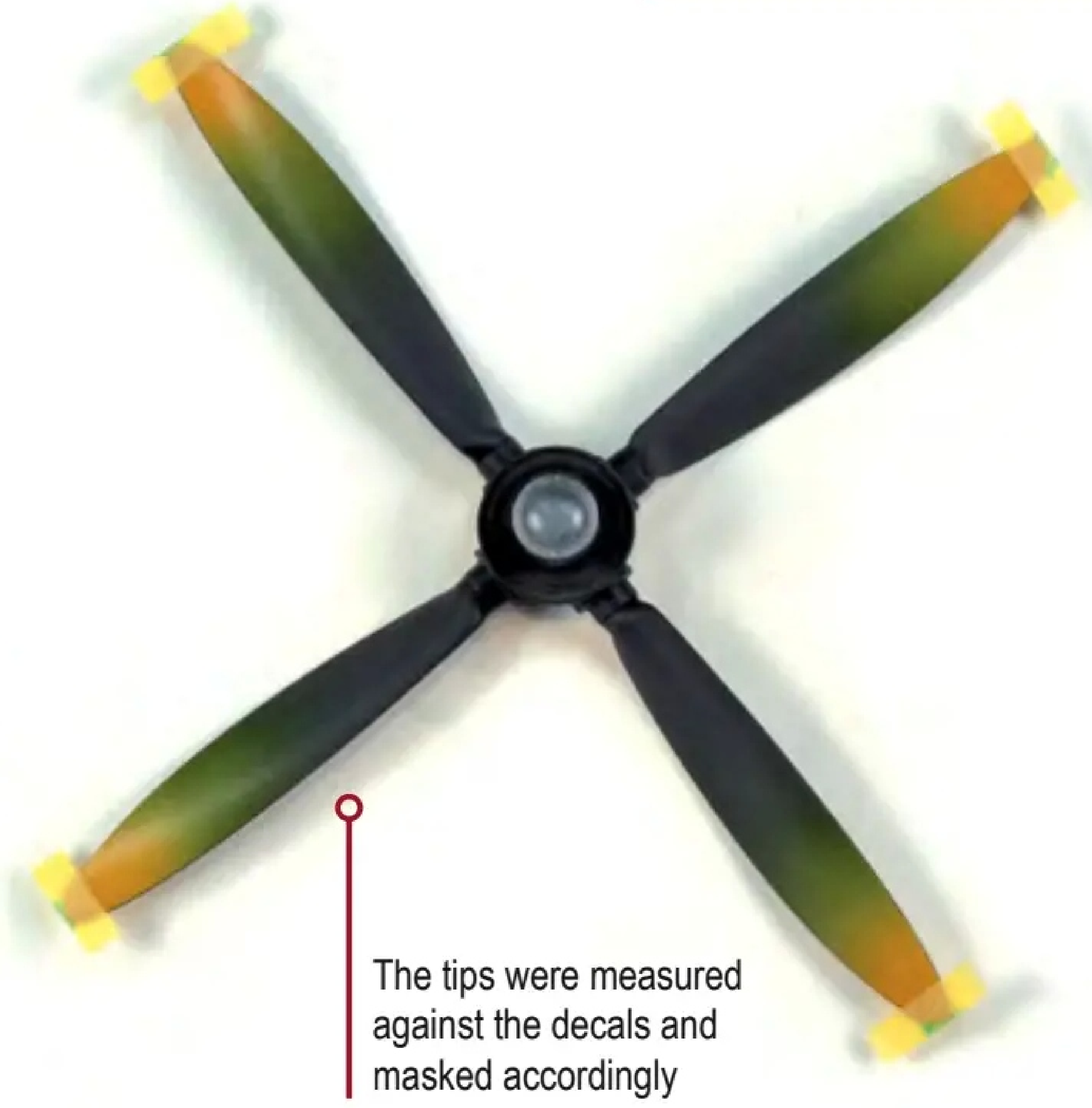


Vallejo Natural Umber pigment was applied using odourless solvent around the edges of the wheel hubs

After priming in Mr Surface 1500 Black, the yellow propeller tips were painted

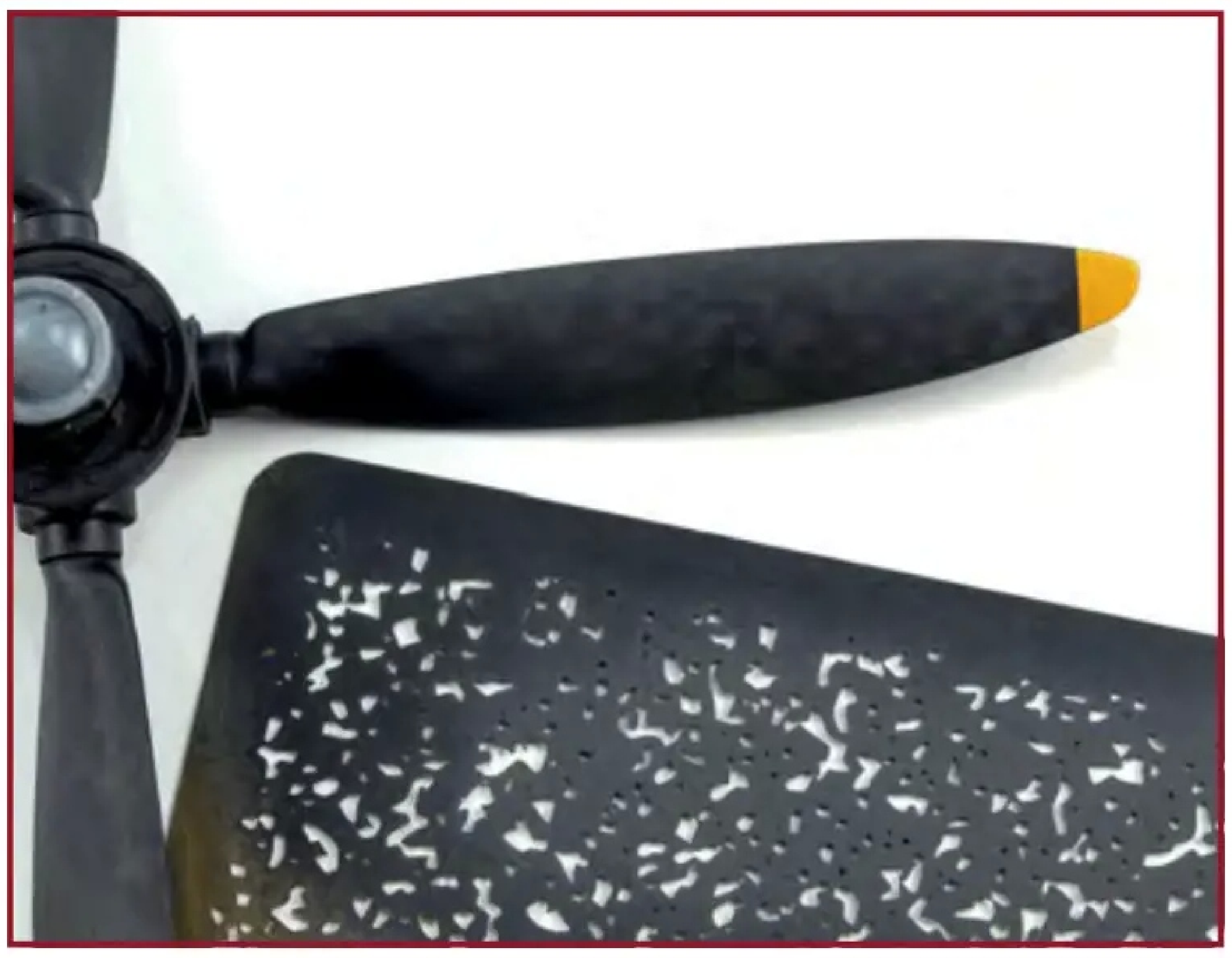
Mr.HOBBY
C 58
Mr.COLOR
ORANGE YELLOW
PRIMARY

Mr Color C58 Orange Yellow was used as a richer shade than standard yellow

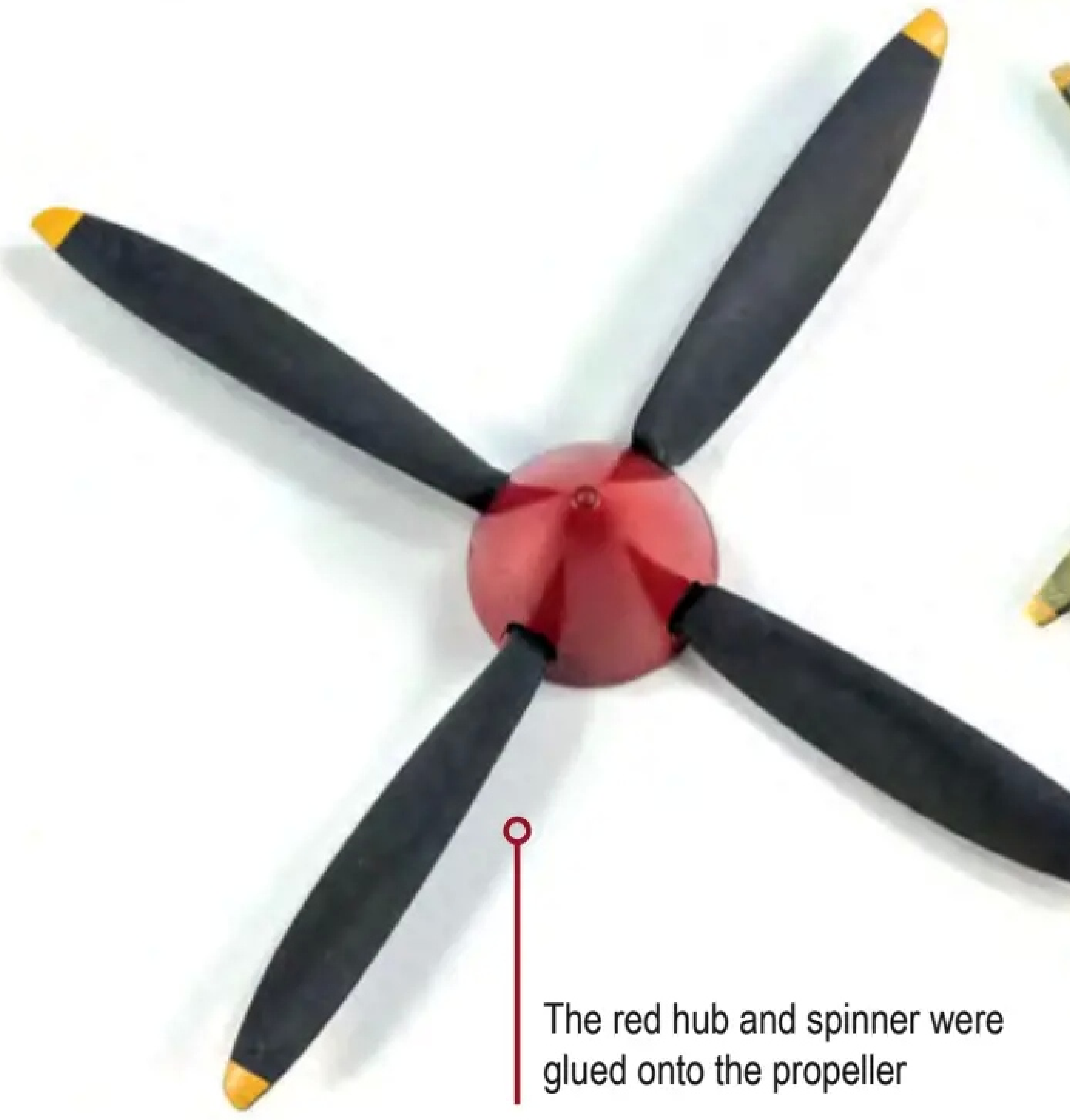


The tips were measured against the decals and masked accordingly

LACQUER PAINT
LP-3
BLACK
AK
RUBBER BLACK
AK



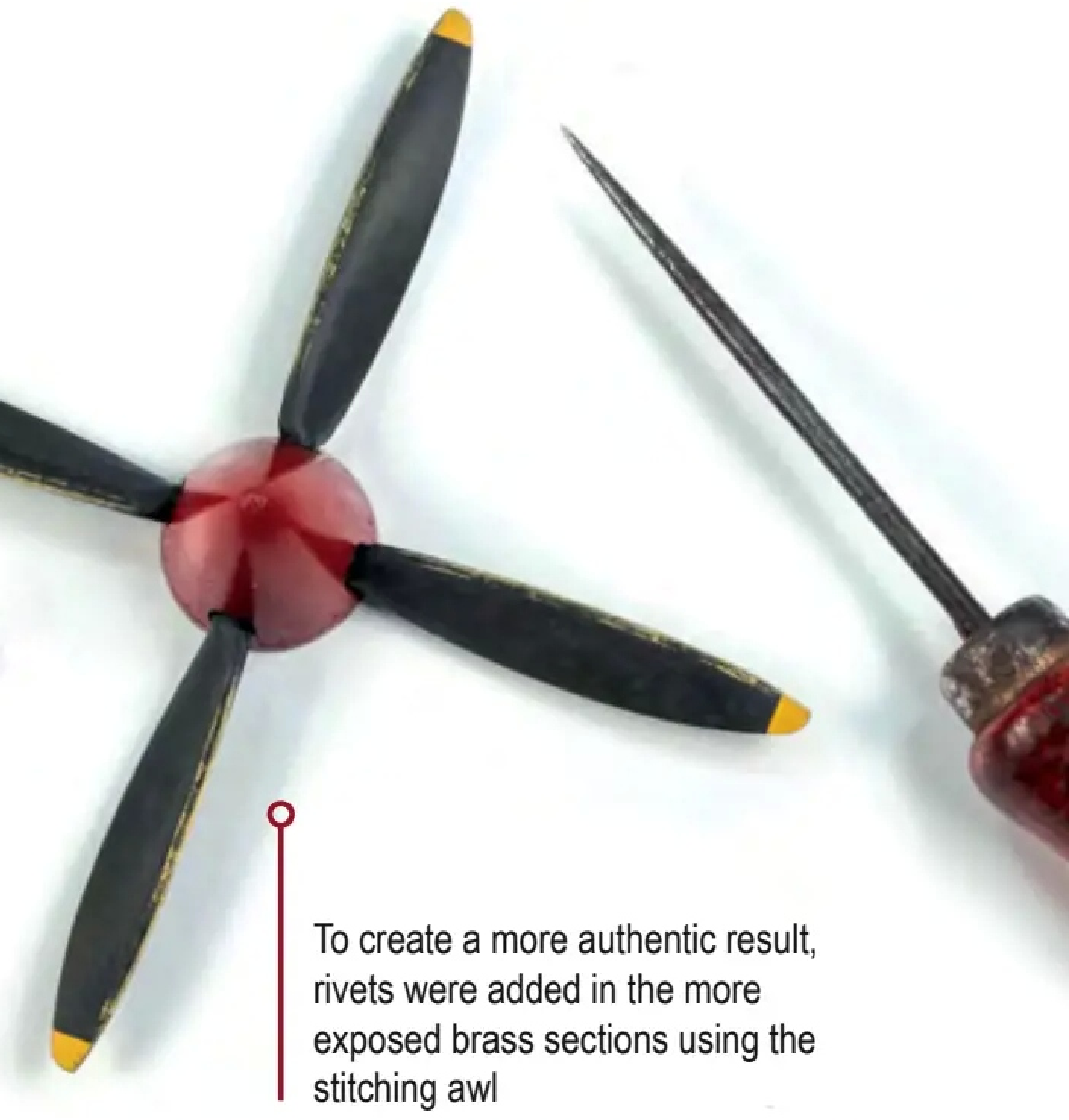
The propeller blades were painted with a base of LP-3 Flat Black, followed by highlights of RC071 and finally a dusting of RC022 through an Uschi spatter mask



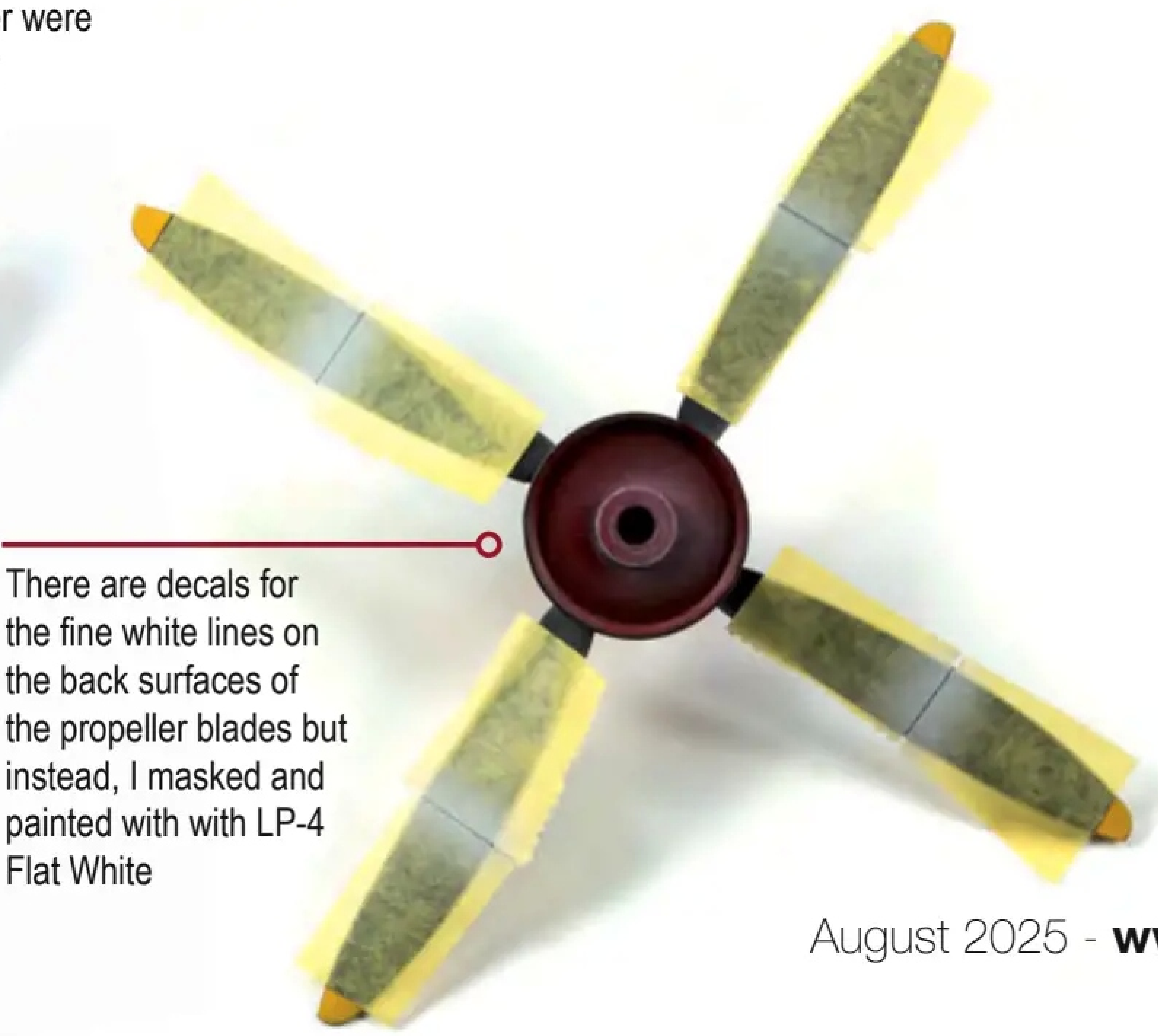
The red hub and spinner were glued onto the propeller

X-12
GOLD LEAF

I decided to add leading edge detail to mimic references I had seen. These propellers were made of laminated timber, with a brass strip edge from base to tip. To show this edge, I masked, dry-brushed and brush painted the wear pattern with X-12 Gold Leaf enamel paint

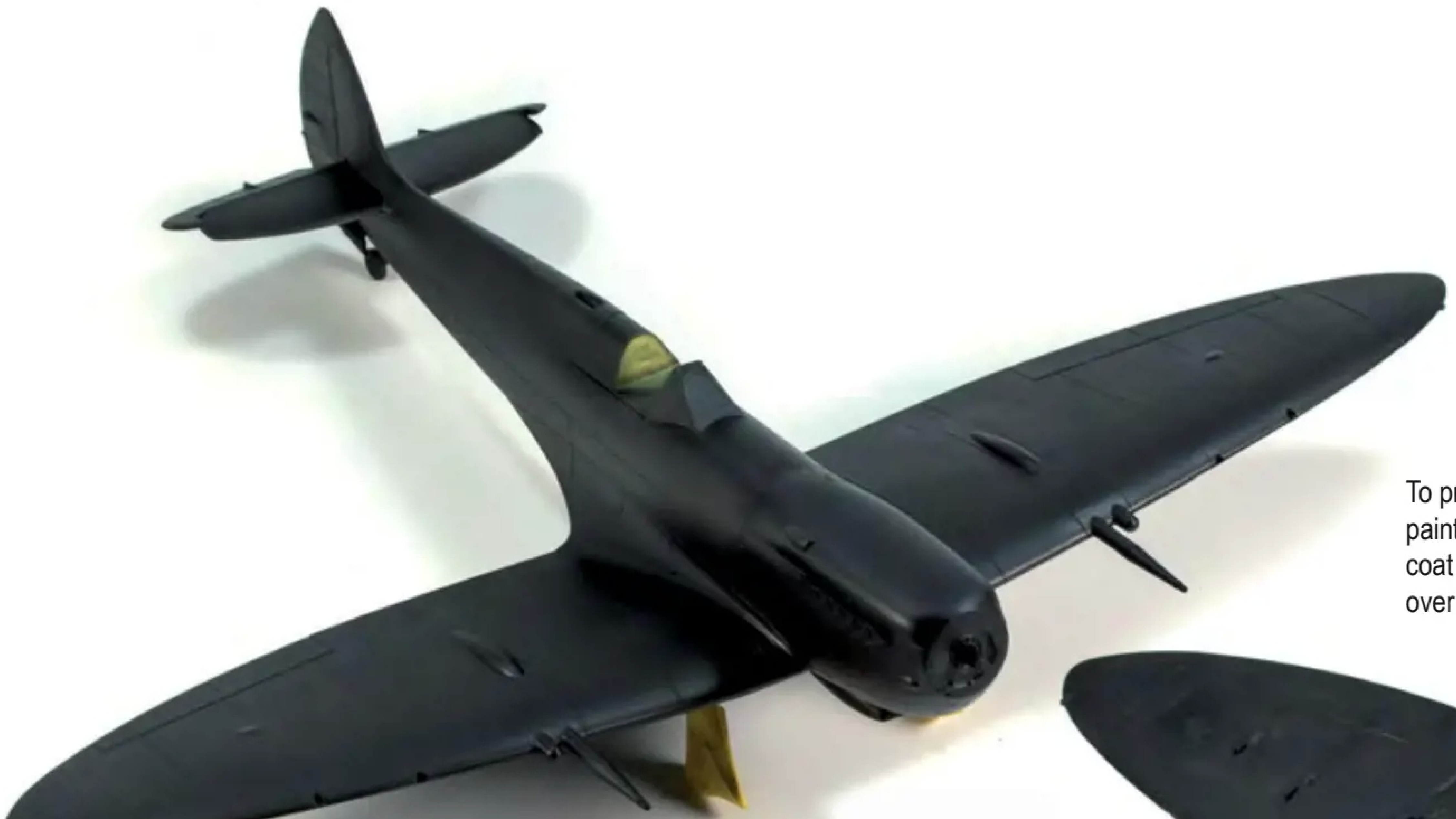


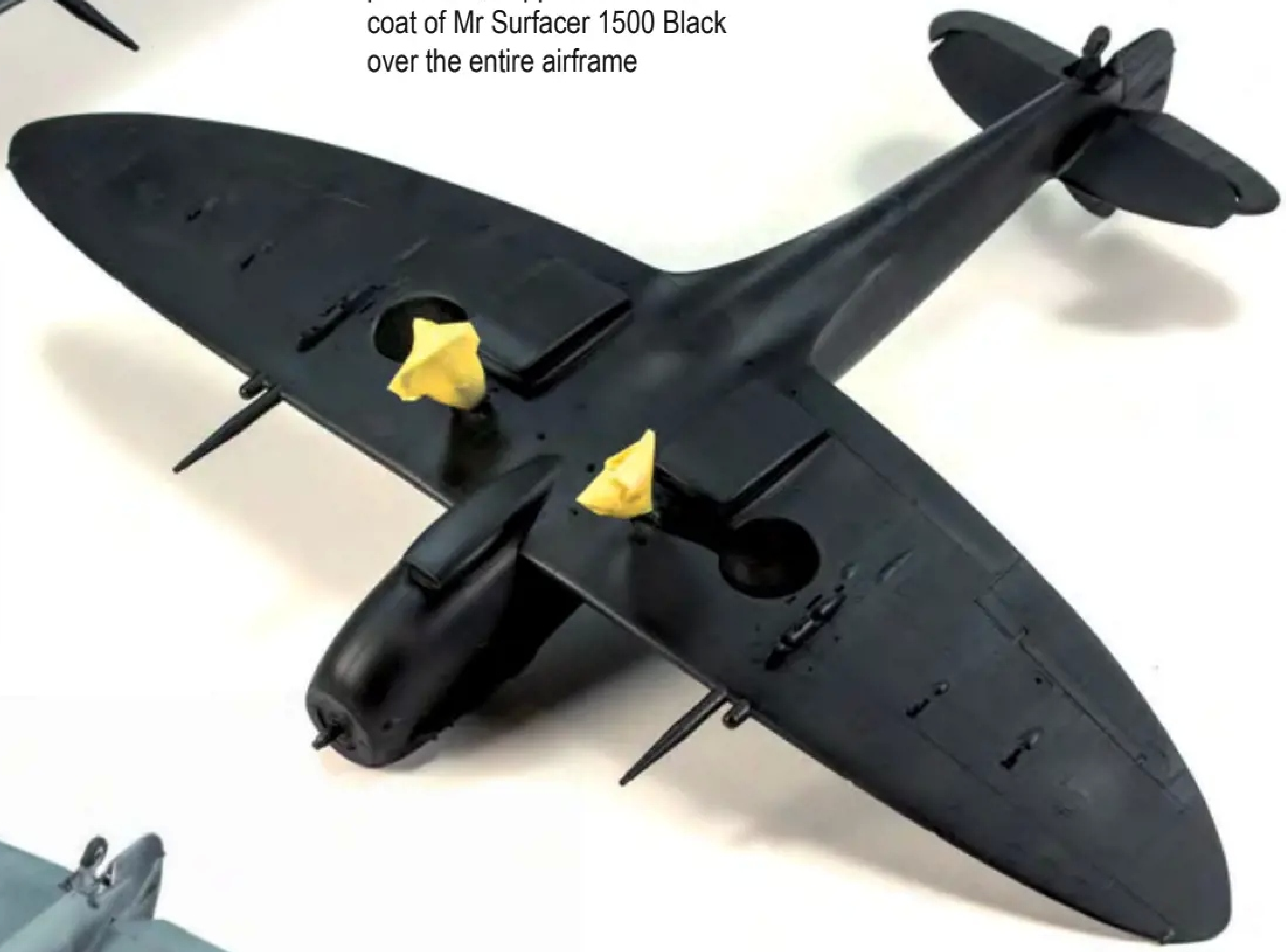
To create a more authentic result, rivets were added in the more exposed brass sections using the stitching awl



There are decals for the fine white lines on the back surfaces of the propeller blades but instead, I masked and painted with with LP-4 Flat White

Tamiya 1:32 Spitfire Mk VIII • Kit No. 60320

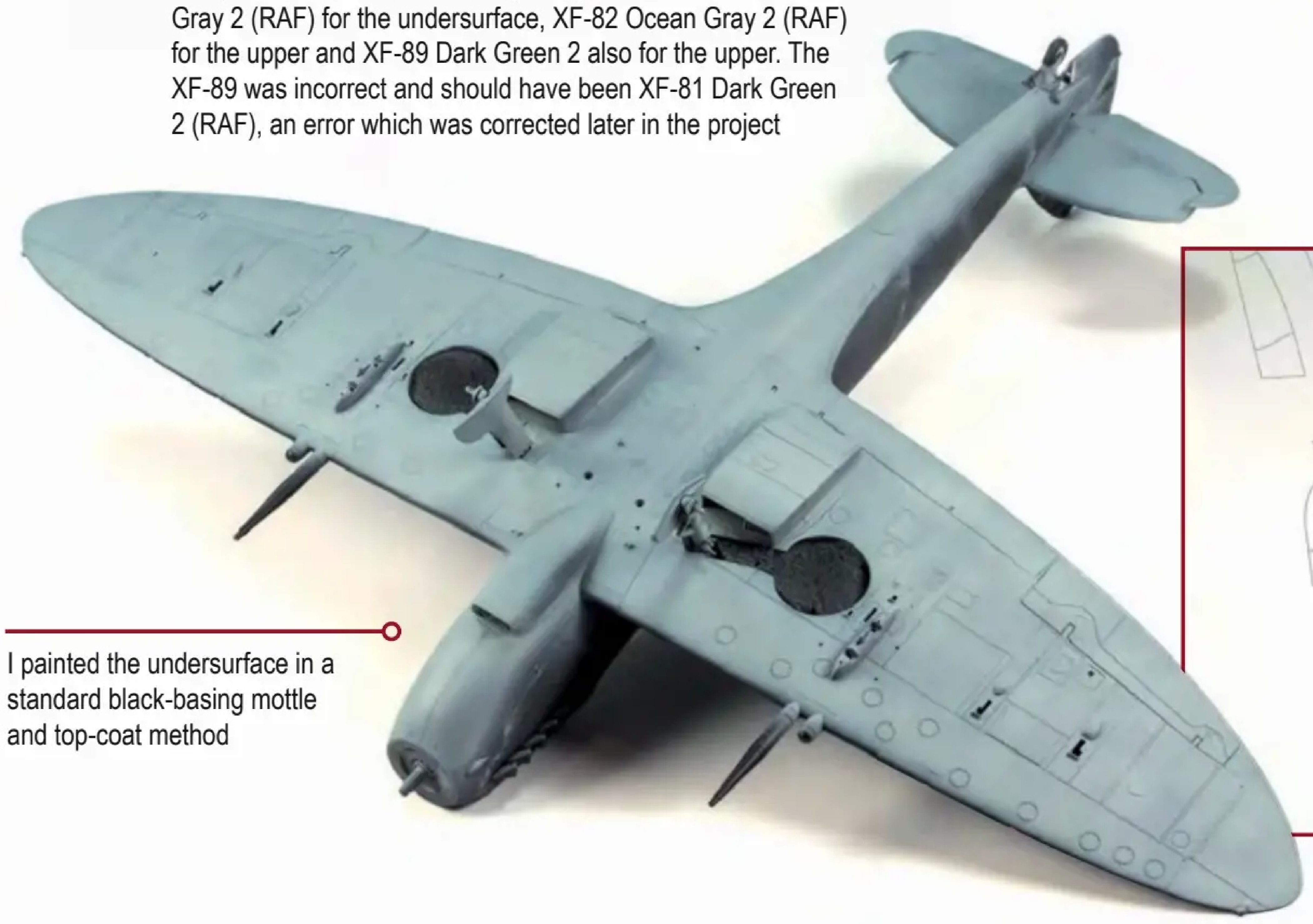




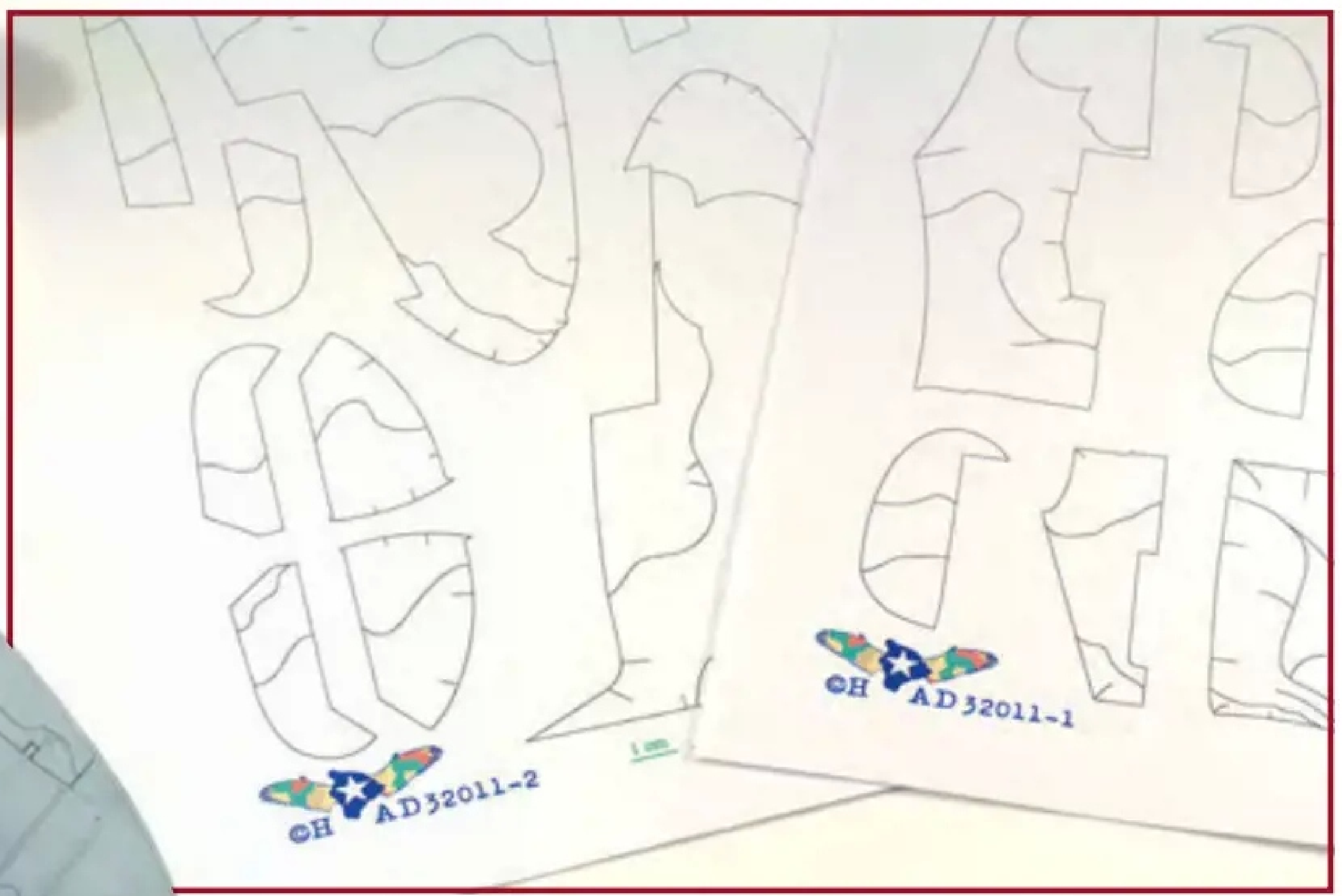
To prepare for the main paintwork, I applied an overall coat of Mr Surfacer 1500 Black over the entire airframe

XF-82
XF-83
XF-89

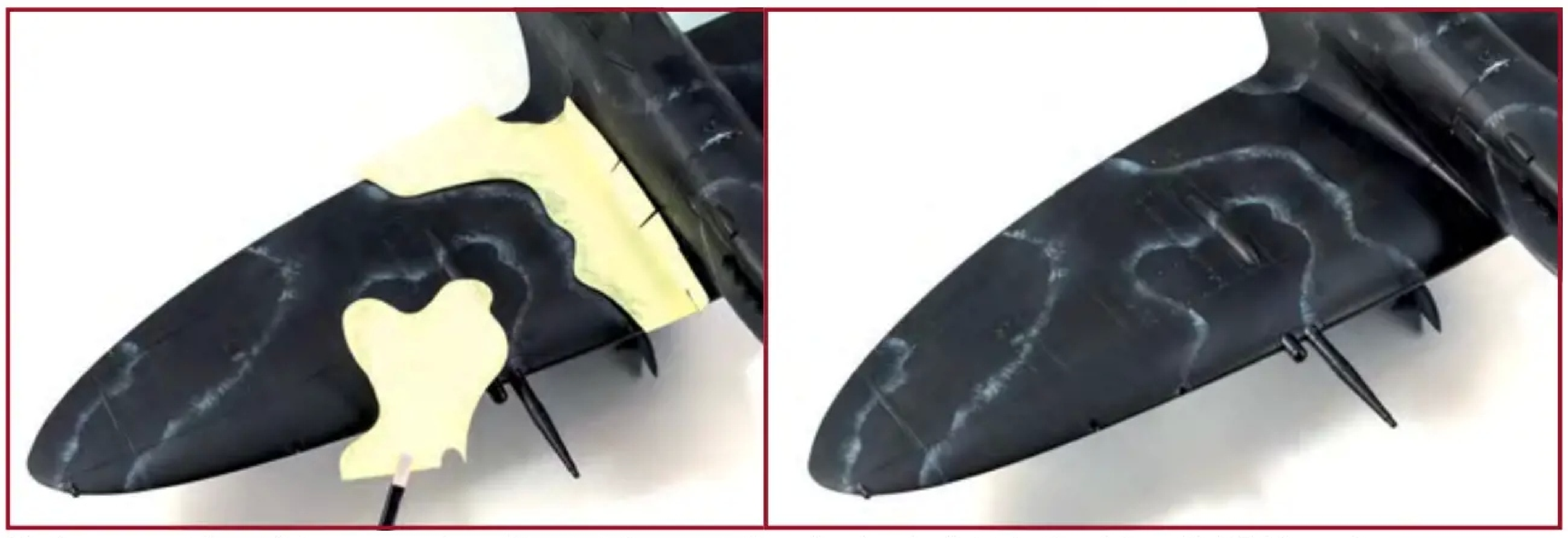
The paints I selected were Tamiya acrylics XF-83 Medium Sea Gray 2 (RAF) for the undersurface, XF-82 Ocean Gray 2 (RAF) for the upper and XF-89 Dark Green 2 also for the upper. The XF-89 was incorrect and should have been XF-81 Dark Green 2 (RAF), an error which was corrected later in the project



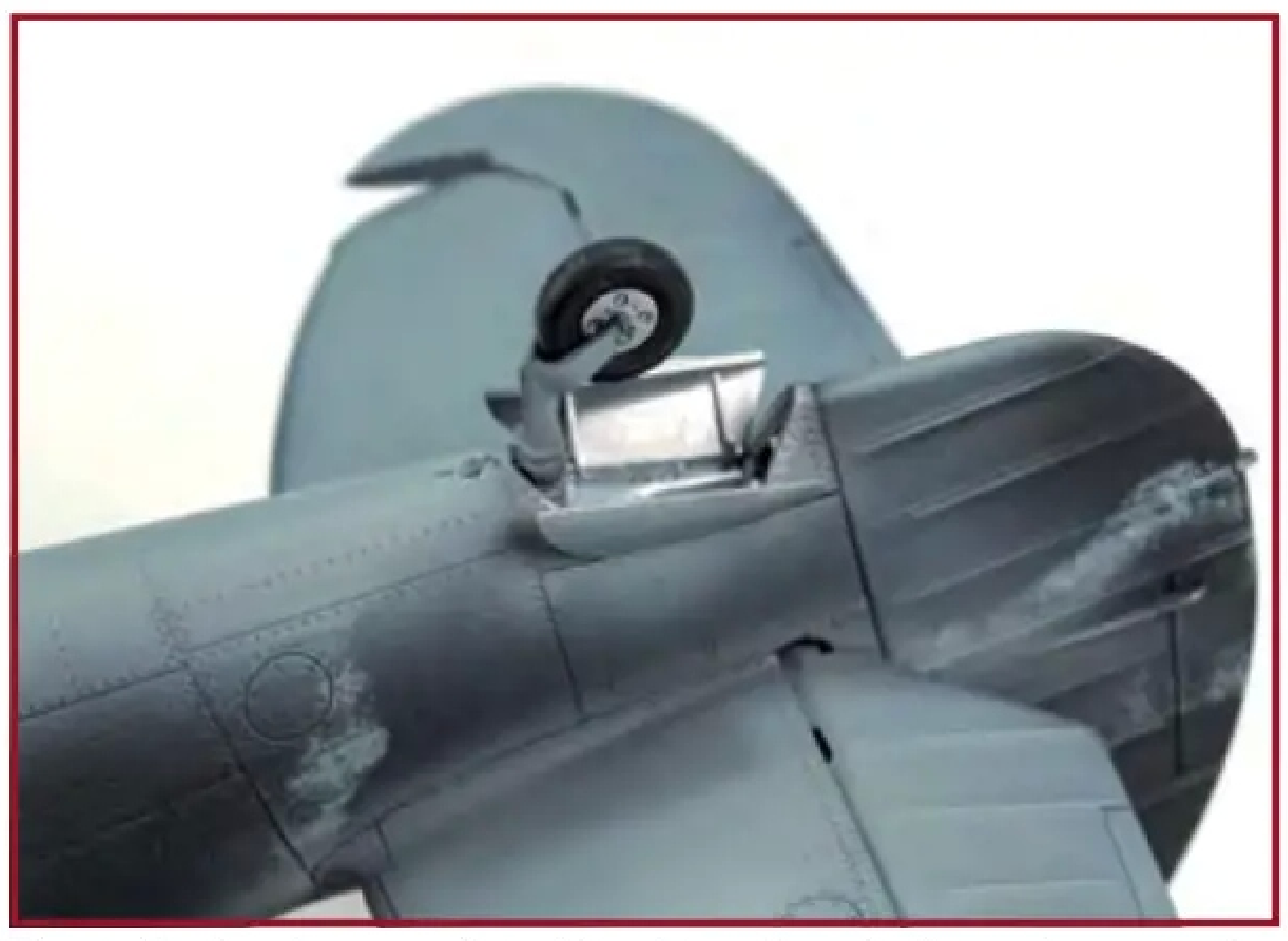
I painted the undersurface in a standard black-basing mottle and top-coat method



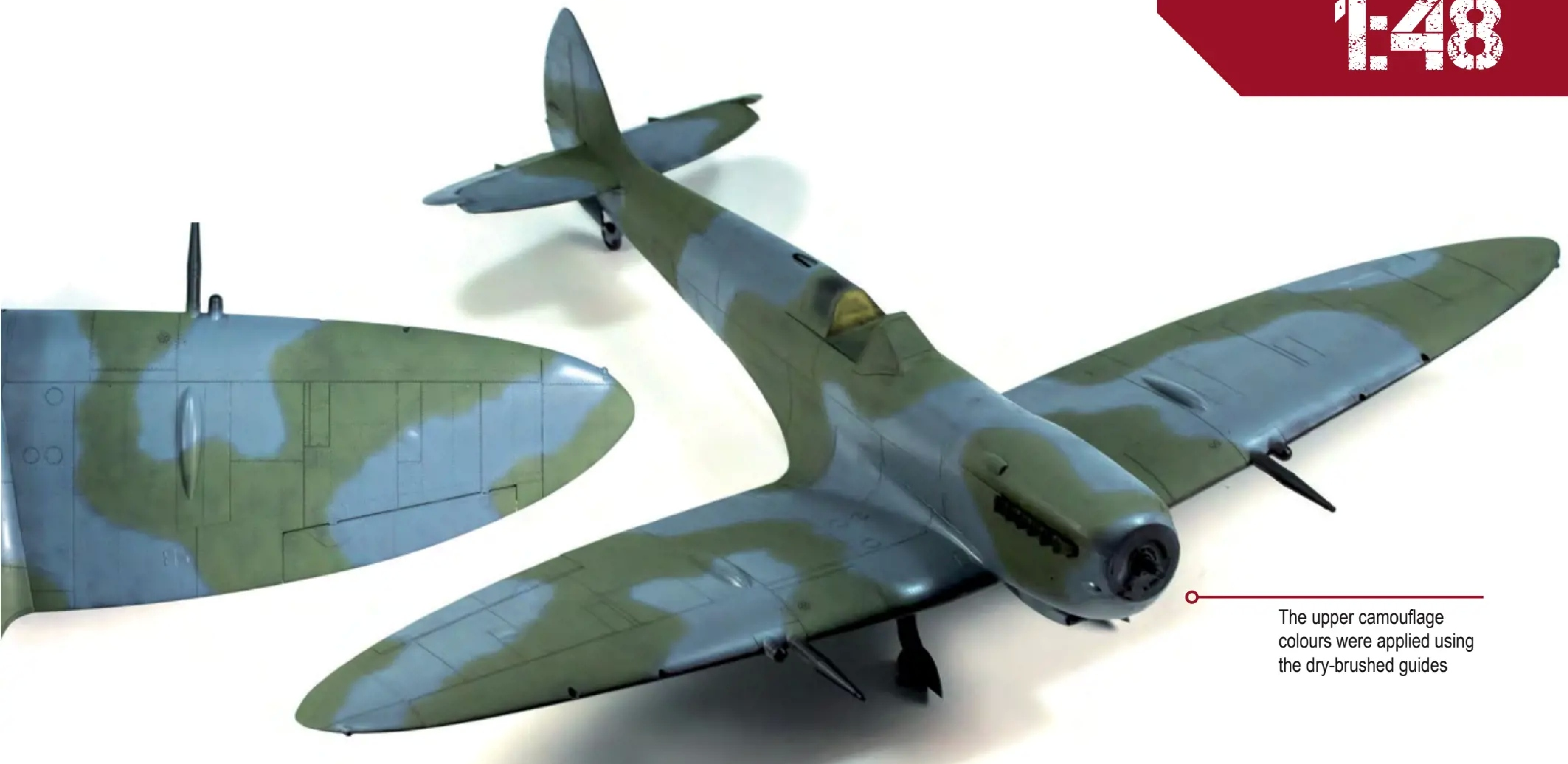
I decided to use camouflage masks made from digital files purchased online through Hawaiian Air Depot.



Masks were cut from plain paper and used to mark the camouflage borders by light dry-brushing with XF-20 acrylic



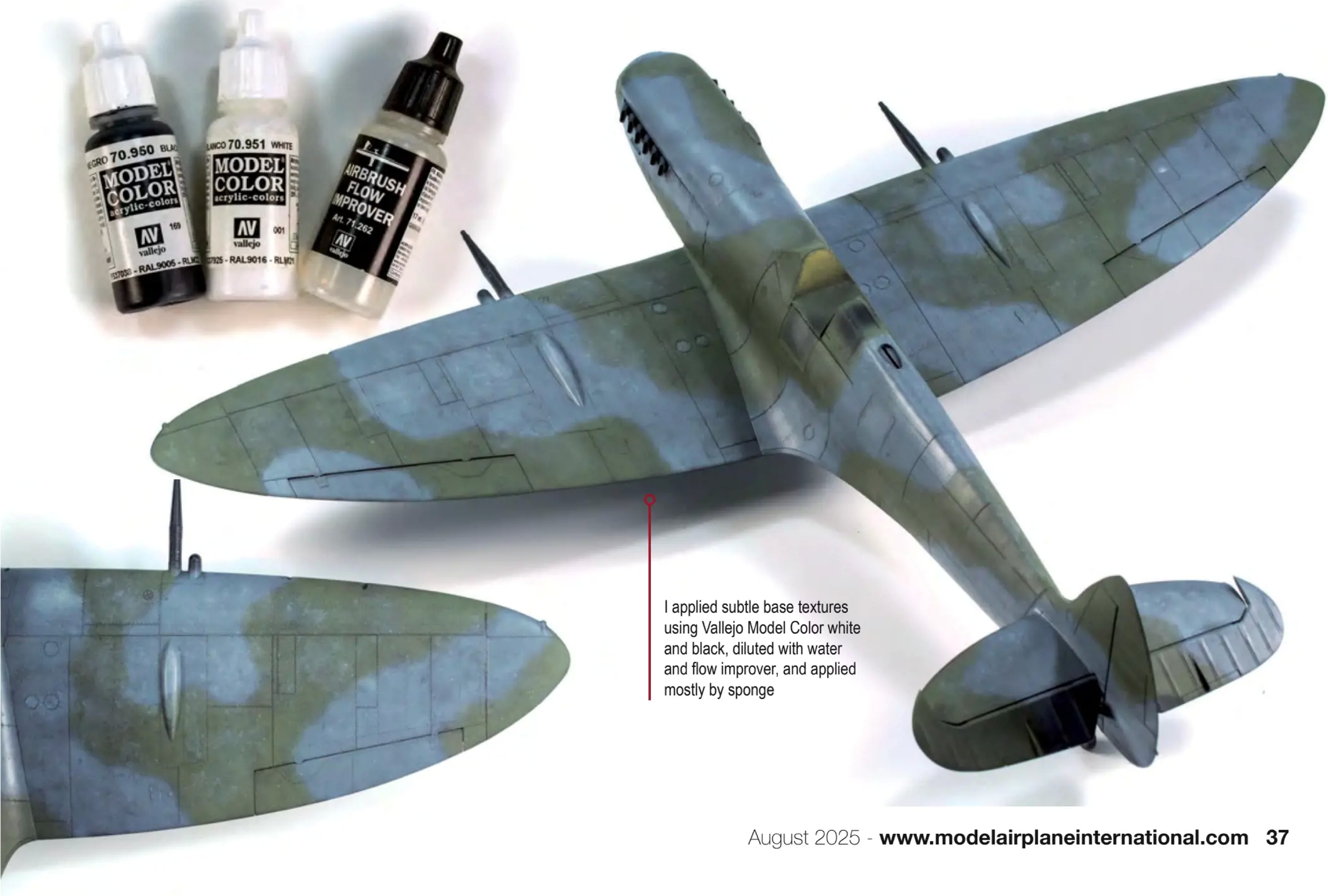
The tail wheel was painted in situ using similar colours to the main landing gear. The hubs were painted first and masked. The black tyre portion was next, followed by the remainder.



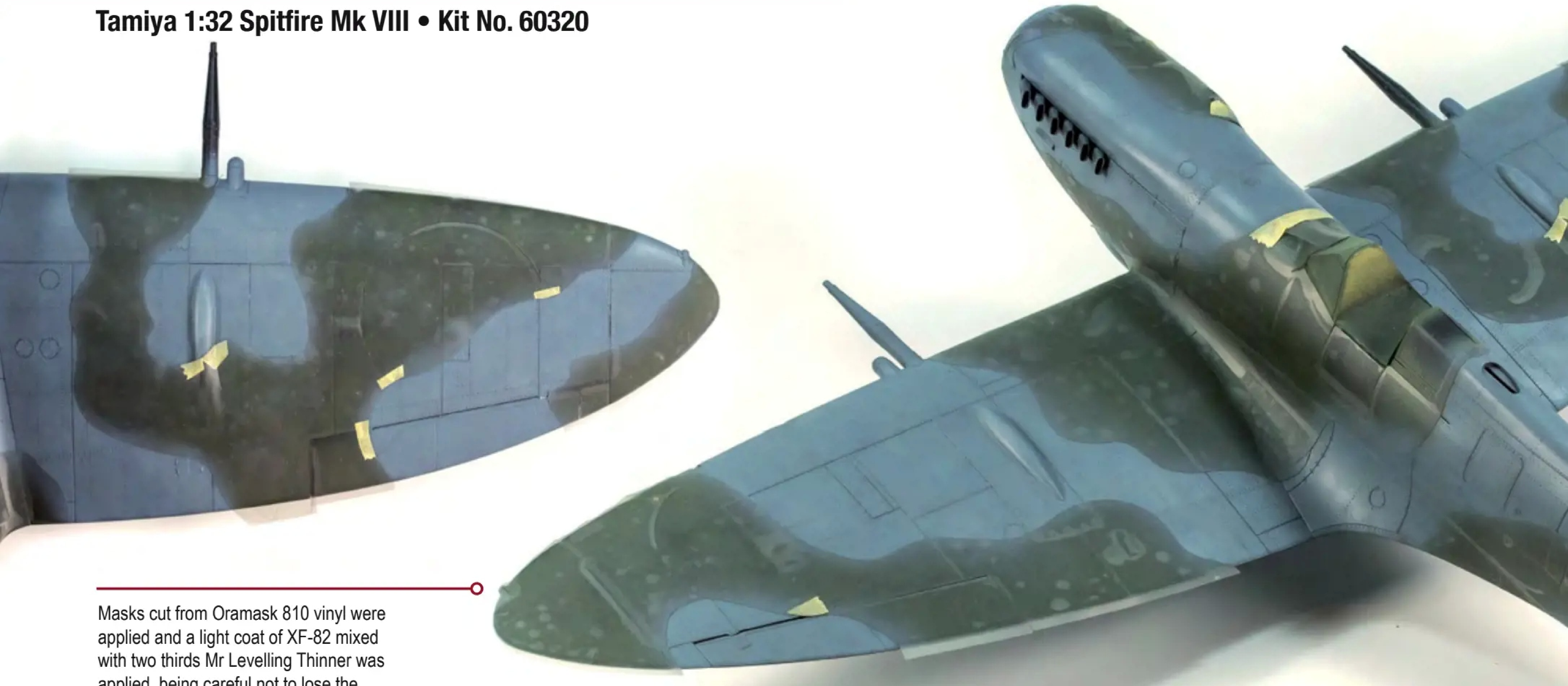
The upper camouflage colours were applied using the dry-brushed guides

I was planning rather subtle textures in black, white and shades of grey using Vallejo acrylic paints in black and white, variously diluted with water and flow improver to help it disperse. The majority of texturing was done with a sponge, with blacks used in depressions and panel lines and white used on higher spots and generally to create a patchy effect. The paints were also flicked from a brush to create random spots of colour which, after final painting, would add to the colour and tone textures in the paint surface. On the lower, a lot more black was used where oil stains would eventually be present.

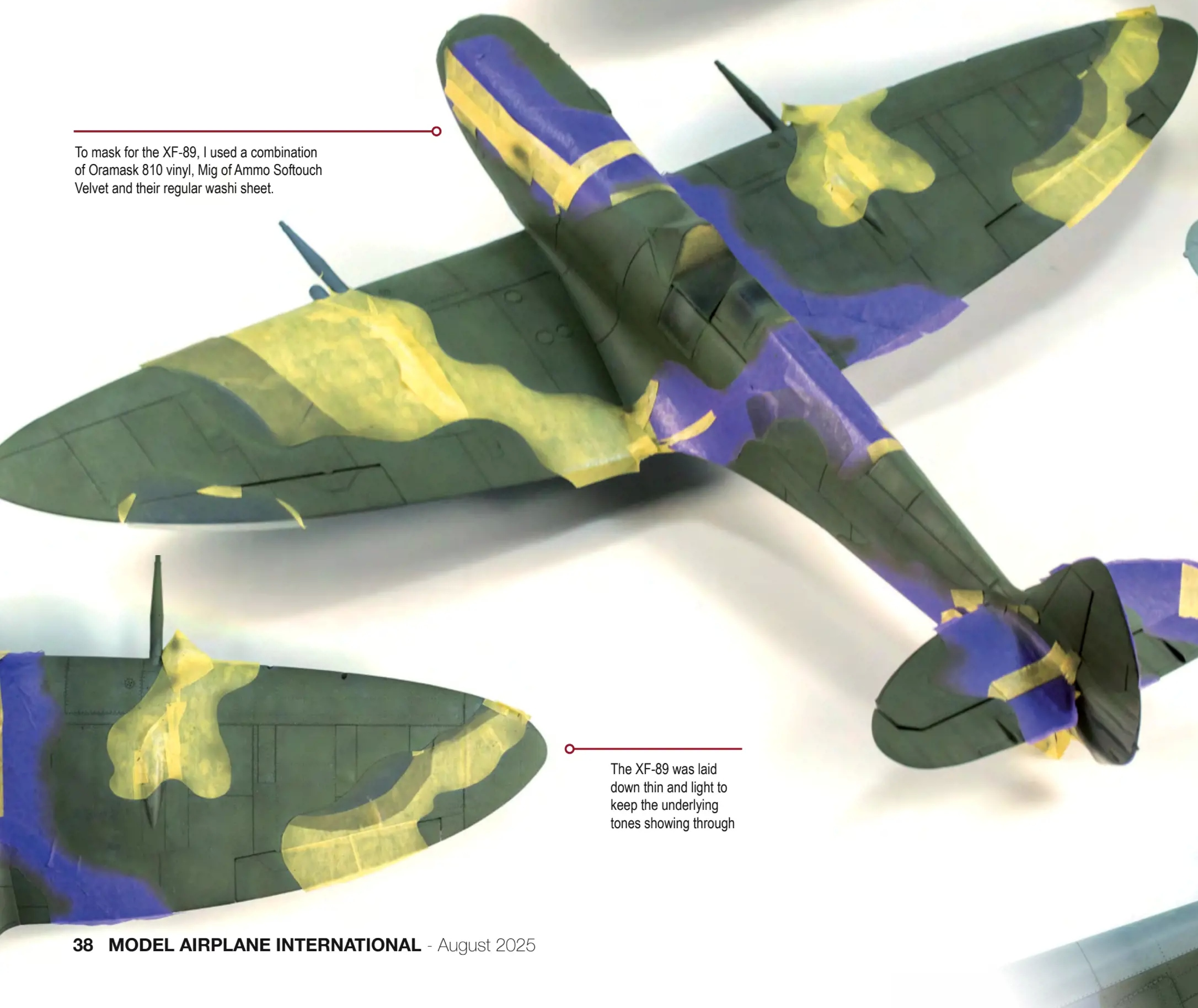
For the final coat, the upper surfaces were completed first, using masks cut on my Silhouette Portrait 2 cutter. I produced masks from my usual material of Oramask 810 adhesive vinyl, Mig of Ammo Softouch Velvet sheet which is purple and very low tack, and Ammo's regular washi sheets. This was mainly as an experiment but ultimately it confirmed Oramask 810 as the best product for most of these kinds of applications as the cuts are so clean. After masking all the green areas, I airbrushed a very light and thin coat of Ocean Gray. Great care was taken to make sure the underlying pre-shading was not lost and this was easy to achieve as the paint was diluted with around 60% Mr Levelling Thinner so lacked opacity. Once dry, I reversed the process, laying down masks over the newly painted Ocean Gray, ready to paint the green



I applied subtle base textures using Vallejo Model Color white and black, diluted with water and flow improver, and applied mostly by sponge



Masks cut from Oramask 810 vinyl were applied and a light coat of XF-82 mixed with two thirds Mr Levelling Thinner was applied, being careful not to lose the underlying textures



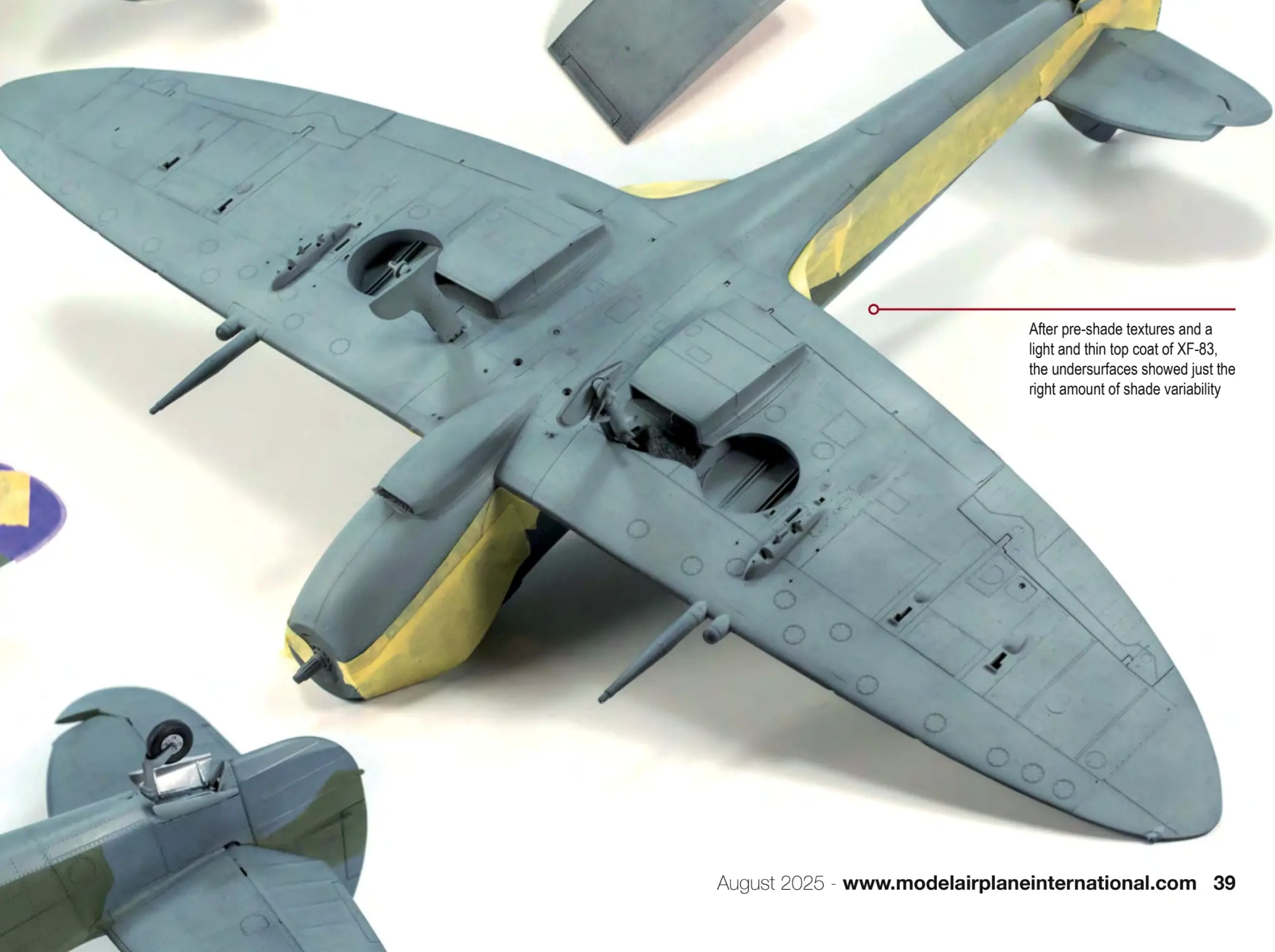
To mask for the XF-89, I used a combination of Oramask 810 vinyl, Mig of Ammo Softouch Velvet and their regular washi sheet.

The XF-89 was laid down thin and light to keep the underlying tones showing through

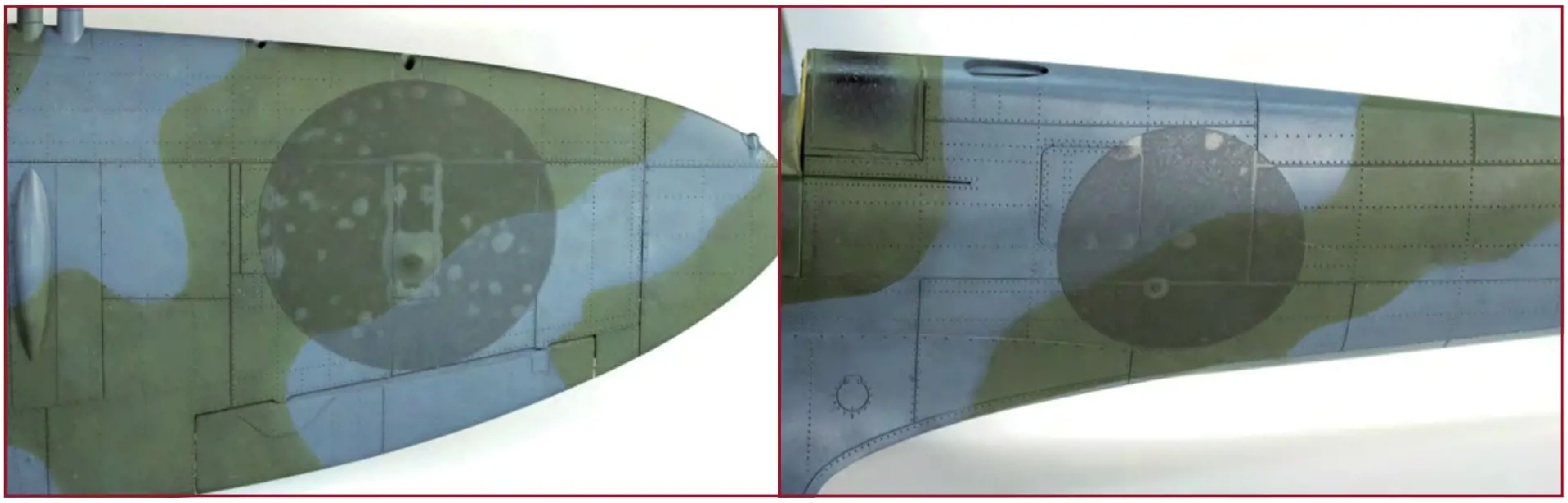
colour. It still hadn't occurred to me that it XF-89 was the wrong shade. In hindsight, the shade was too lime green and lacked the darkness of XF-81. Once the second camouflage colour was complete, some touch ups were done in the very few areas where masks didn't perfectly match up, and Tamiya tape was used to mask for the lower surface final coat. Following the same principles of thin paint and sparing application, the lower surface was completed.

My plan was to minimise use of decals, so I started on the markings. Firstly the upper wing and fuselage roundels needed to show overpainted surrounds as these aircraft arrived with RAF markings, which were painted over in the field before smaller RAAF marking were painted in their place. My understanding at this point was that they used whatever paint they had at hand, which is not necessarily false, but during the process I learned more and more about the colour used on most occasions. To overpaint the green, they used Foliage Green and for the grey, RAAF Grey. My initial attempt was too dark a grey and too yellow a green. I measured the kit's RAF roundels and produced circle masks from my cutter, which were placed in position to guide the placement of the circle border in Oramask vinyl. My initial green was XF-26 Deep Green with a touch of XF-4 Yellow Green added. For the grey I used LP-27 German Gray. The colours were applied very lightly to create a nicely uneven finish. Having assumed they would suffice, I moved on to the more challenging shark mouth.

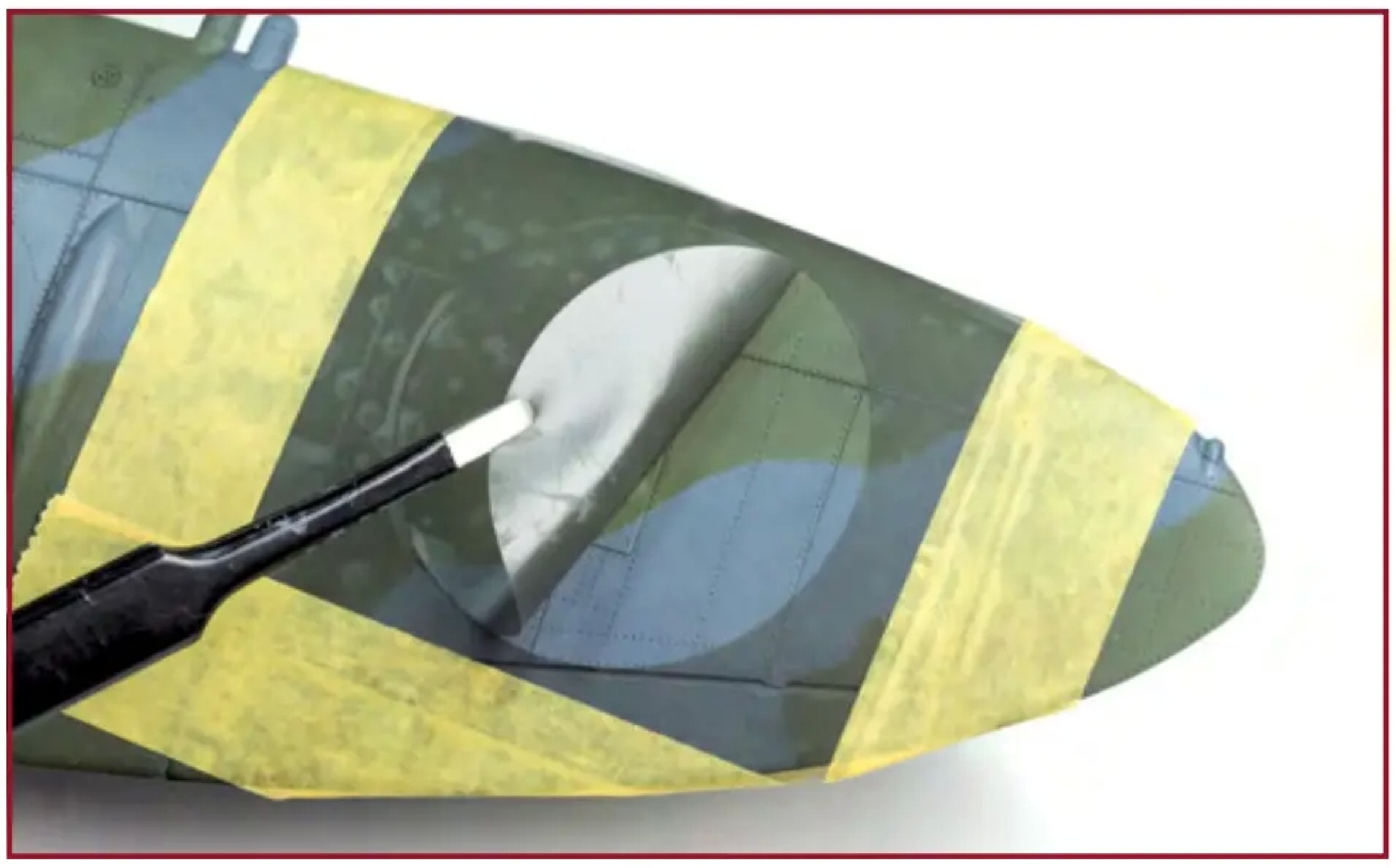
I used scans of the decal sheet to produce paint masks. To create different parts of the masks I needed to change the contrast of the image so that the cutter's software would recognise different shapes, mainly to differentiate between the teeth and the gums. So with two different sets of masks, I set about work in that area. Firstly, I laid down the outer borders and painted the whole inner surface with LP-3 Flat Black. Next, I masked anything that needed to stay black, being the inner portion and the border outline, using Mr Masking Sol Neo to touch up any gaps



After pre-shade textures and a light and thin top coat of XF-83, the undersurfaces showed just the right amount of shade variability



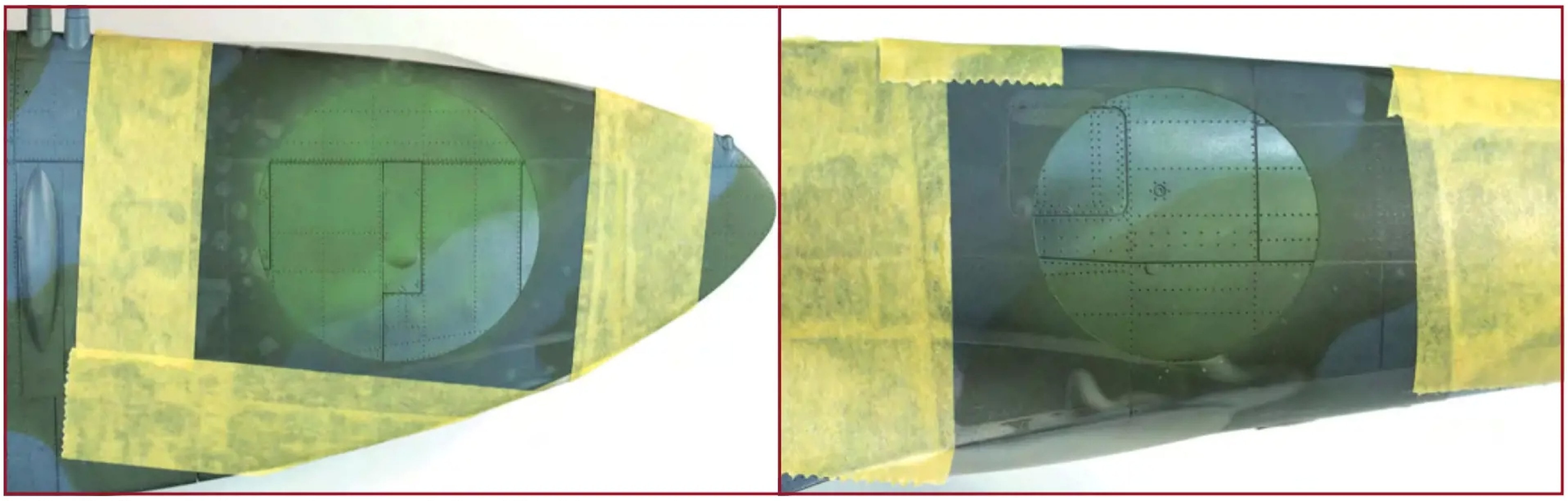
To prepare for the overpainted areas behind the roundels on the upper wings and fuselage areas, I measured the larger RAF kit decals and cut masks of the same size from Oramask 810. The easiest first step is to lay down the solid circle as it is easier to position accurately



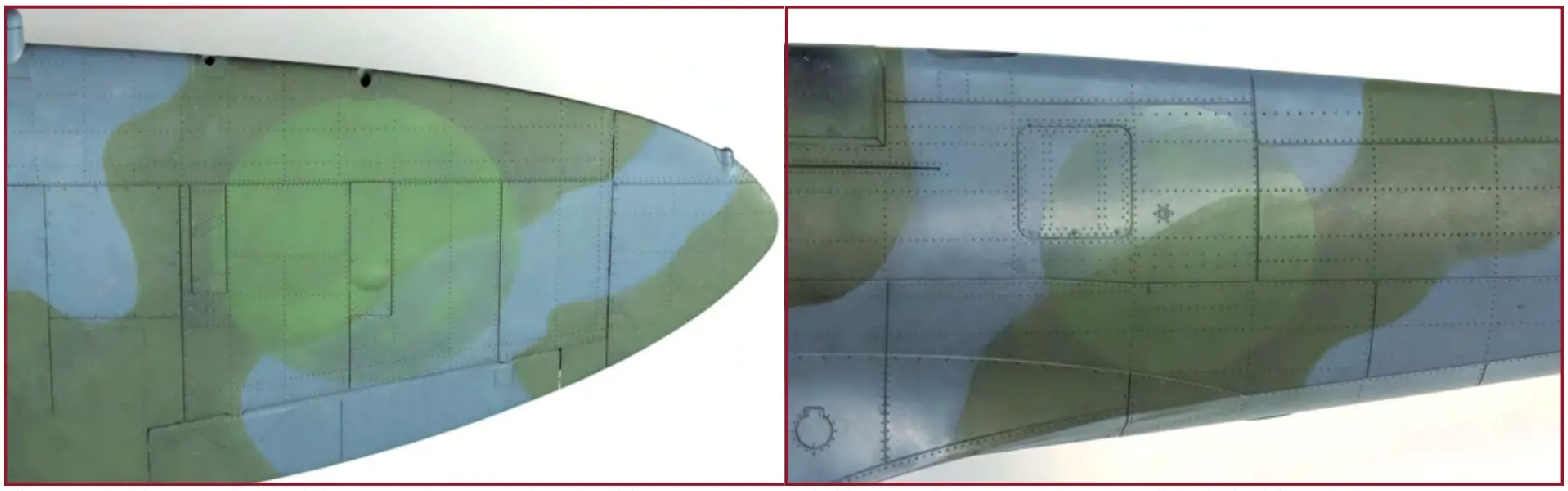
The outer mask is applied to line up with the inner circle, which is then removed

YELLOW GREEN
XF-4
DEEP GREEN
XF-26
LACQUER PAINT
LP-27
GERMAN GRAY
TAMIYA

My first attempt for the overpainted areas was to use a mixture of XF-26 Deep Green and XF-4 Yellow Green for the green and LP-27 German Gray for the grey



A light coat of the overpaint green and grey was applied in a deliberately uneven manner



After removal of the masks, I was initially happy as these areas showed sufficient contrast compared with surrounding areas to suggest overpainting in the field

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Highly attractive Belgian low wing light aircraft from the era of simple, open cockpit private flying. Machine offers scale modellers pleasant lines and simple shape. (35 images)

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The famous 'Shagbag' biplane seaplane, used during WW2 as an air-sea rescue craft and fleet gunnery spotter. (80 images)

North American A36 Invader
The ground attack variant of the Alison engined P-51A. Photos, in detail, of the world's only airworthy example. (69 images)

Morane Saulnier MS406
French WW2 fighter that fought in the Battle of France, 1940. Swiss restored example (92 images)

Thulin, Tummelisa
Swedish 1919-era fighter trainer that served the Swedish air arm for many years. Example depicted is a faithful reproduction. (55 images)

North American P51b Mustang
First of the Rolls Royce Merlin engined Mustangs, this collection depicts the Fantasy of Flight Museum's restored example, with overly polished plain metal surfaces. Much detail. (102 images) Also, 41 images of The Fighter Collection's P-51C in bare metal restoration, showing much surface and internal airframe detail. A real bumper bundle! (over 140 images)

North American B25 Mitchell
Fantasy of Flight Museum's example. Photographed soon after superb restoration. Full nose to tail detail. (74 images)

North American AT6 Harvard
AT-6, SNJ, Texan, Harvard – call it what you will. 55,000 were built – this example is in U.S. Army colours, with comprehensive close-up detail, nose to tail. (76 images)

Percival Mew Gull
Famous 1930s racing and record setting aircraft that will forever linked with the achievements of British aviator Alex Henshaw. (35 images)

North American T28
The advanced trainer aircraft that served in many air arms worldwide and also became a counter-insurgency ground attack aircraft. Examples illustrated are from France, where the type served for many years as the 'Fenec'. (100 plus images)

North American P51d Mustang
The definitive bubble canopy Merlin Mustang. In detail, showing several restored examples. This is the Fantasy of Flight Museum's overpolished example, but the close-up detail is all there. (102 images)

Piper Super Cub
The later, 'cleaned-up' version of the famous Piper J-3, with more elegant engine cowl. Two examples shown. (80 images)

Piper L-4 Grasshopper
Military version of the famous Piper J-3 Cub used during WW2 and close reconnaissance and spotter aircraft and for many other tasks. (80 images)

Percival Provost
Airworthy, preserved example of the RAF piston engined basic trainer used in the 1950s. Full detail. (30 images)

Polikarpov I-15
The ultra agile Russian biplane fighter aircraft that saw widespread service prior to and in the early years of WW2 and during the Spanish civil war. Example illustrated is a superbly restored machine. (100 images)

Pitts S.1
Homebuilt example by Bob Millinchip, as seen at 2002 PFA Rally. Complete detail study. (36 images)

Piper Tomahawk
Cranfield Flying School example of this civil ab-initio trainer aircraft. (54 images)

Ryan Pt-22
US military primary trainer aircraft that served with both US Army and Navy, thus providing ab-initio flight training for the majority of US airmen of the WW2 period. A highly attractive aircraft. 90 images of the preserved, airworthy aircraft, hangared at the Shutleworth Collection, Old Warden.

Republic P-47d Thunderbolt
Bubble-canopy version of the much loved 'Jug', photographed in fine detail. (105 images)

Polikarpov Po-2
The world's most numerously produced aircraft of all time, the P0-2 was a great maid-of-all-work used by both military and civil groups in the old Soviet Union and its satellite states. Example depicted is pristine, and now in storage at Old Warden. (170 images)

Sopwith Triplane
The last example of the 'Tripehound' is the one built (in 1980!) from original Sopwith drawings by Northern Aero Works and given sequential manufacturer's number by Sir Thomas Sopwith himself in recognition of the outstanding workmanship. Extensive detail. (120 images)

Sopwith Pup
The charismatic Sopwith Scout (to give its correct designation) is a great scale modellers' favourite. Example depicted is the one preserved and regularly flown at the Shuttleworth Collection, Old Warden. (50 images)

S.E.5A
Shuttleworth Museum's airworthy example presented in full detail. (100 plus images)

Supermarine Seafire Mk17
The Seafire 17 was no navalised Spit. A true ground-up naval fighter. (64 images)

Stinson 105
Light, private aircraft of the 1940-50s era, with lots of character. (75 images)

Steen Skybolt
Attractive U.S. aerobatic biplane, presented in full detail. (89 images)

Supermarine Spitfire MK.IX
The most numerous version of the classic Spitfire that turned the tables on the Luftwaffe's Focke Wulf Fw 190. (90 images)

Supermarine Spitfire MK XIV
2nd of the Griffon-engined Spits (Mk.XII was first), the bigger engine forced a change of the classic Spifire shape. (58 images)

Supermarine Spitfire MK VC
Shuttleworth Museum's airworthy example presented in it's latest form with classic rounded wingtip planform. (160 plus images)

Hawker Typhoon
The Hawker Typhoon was a British single-seat fighter bomber, produced by Hawker Aircraft. While the Typhoon was designed to be a medium-high altitude interceptor. 117 images

Monocoupe
The Monocoupes were side-by-side two-seat lightplanes of mixed wood and steel-tube basic construction with fabric covering. A braced high-wing monoplane with fixed tailskid landing gear, and the reverse curve rear fuselage lines that were to become one of the signature identifier features of the Monocoupes. 55 photos

Me 410A – 1/U2
For those who fancy a twin, but something outside the 'normal' favourites, consider the Luftwaffe's final 'destroyer' heavy fighter that packed a powerful punch 79 photos

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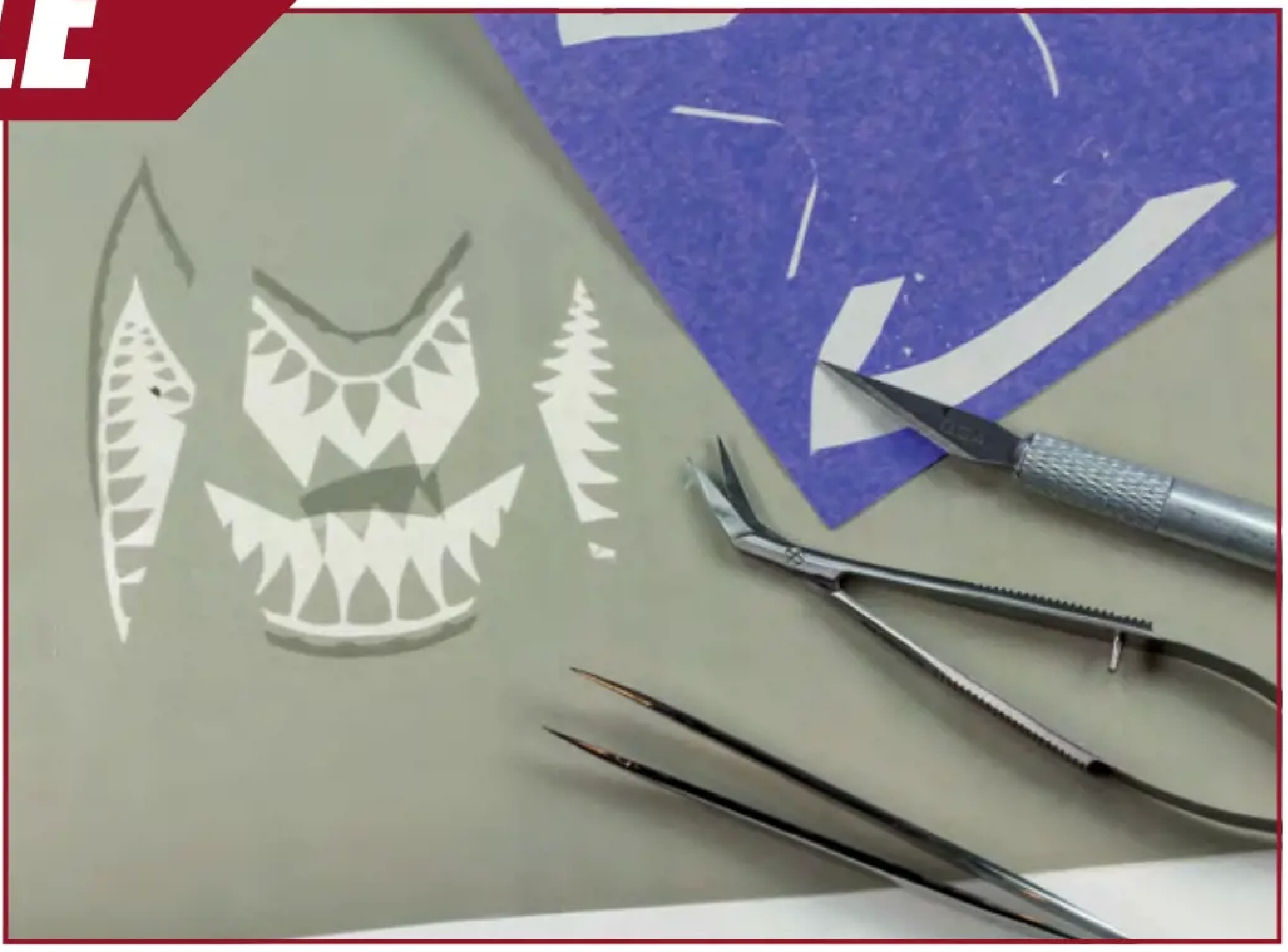
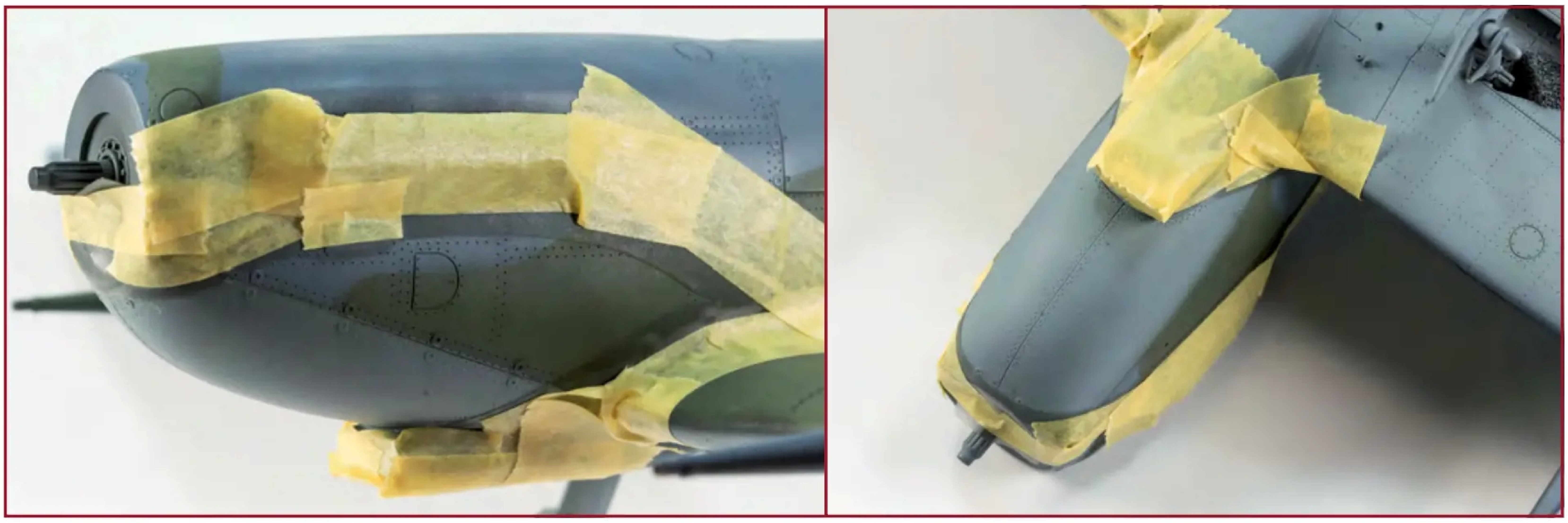
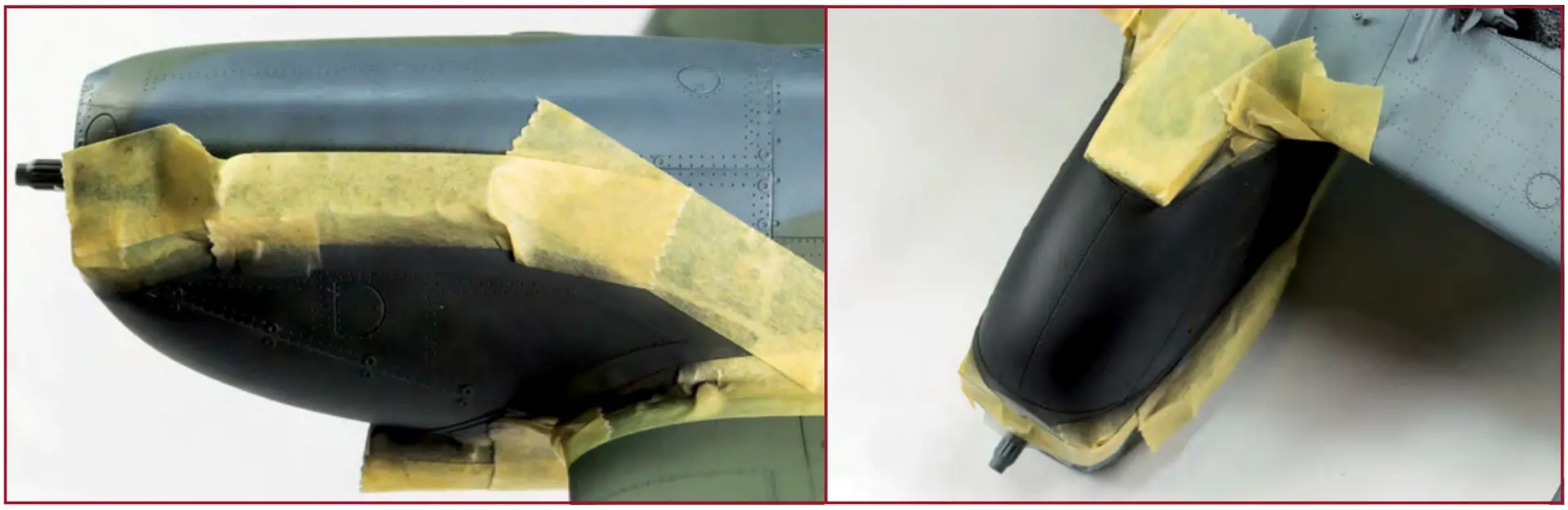
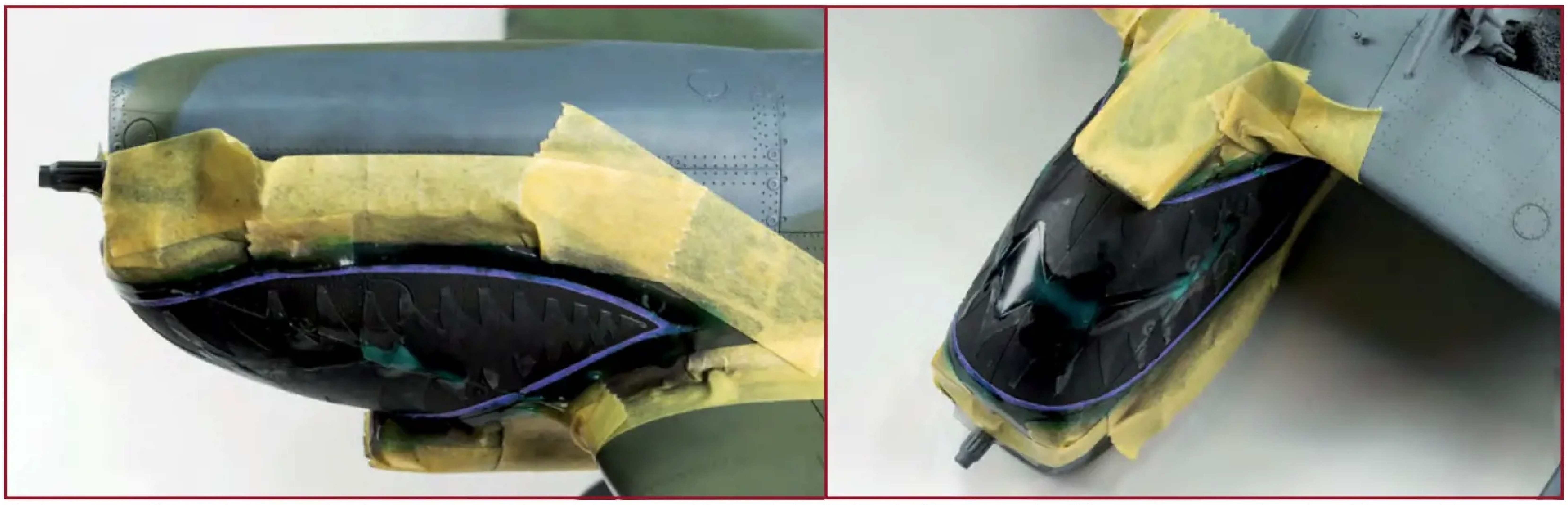
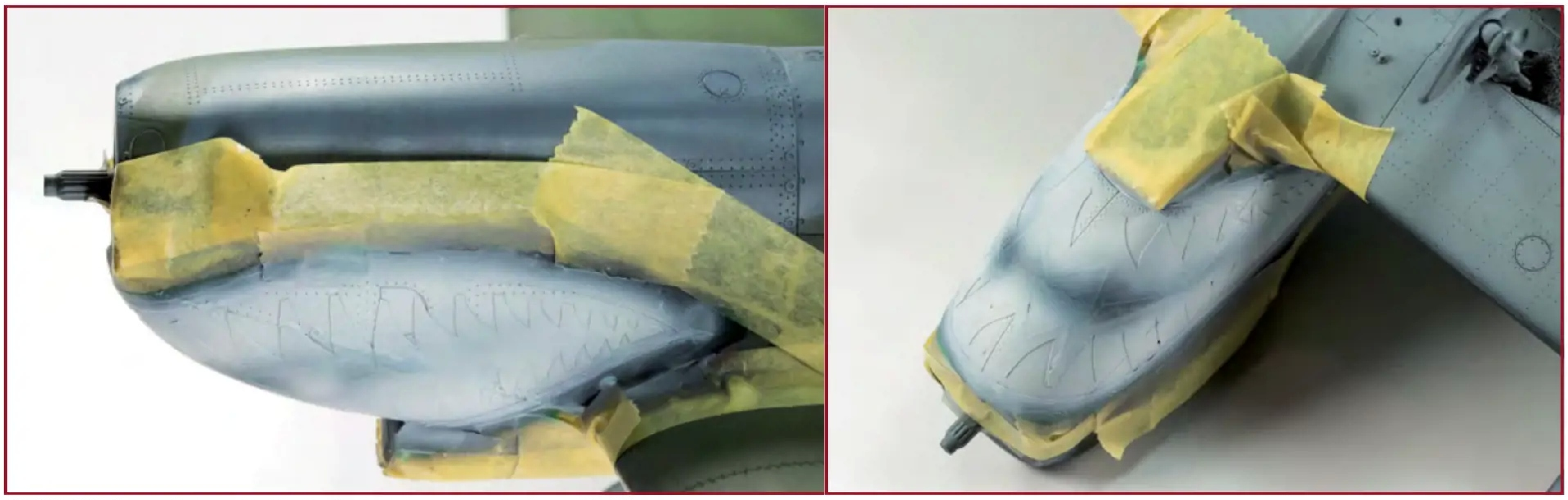
◀ between masking pieces. I airbrushed LP-4 Flat white as the next colour coat. I then added in all the individual teeth, and used masking solution along the joins of all masks to prevent paint seeping through the gaps. The final colour, XF-7 Flat Red was applied to complete the gums. Masks were then removed and work was done on the eyes, using the exact same process and paint sequence as just used for the mouth. With all the masking removed, I used the equivalent shades of enamel paint to brush-touch any areas that needed it. I embraced the idea of slight imperfection as I would have imagined the field-applied artwork might have been much the same. ▶


I decided to paint the shark mouth to add authenticity compared with using the decal. To do this I scanned the decal and cut masks from both Oramask 810 and Softouch Velvet sheet

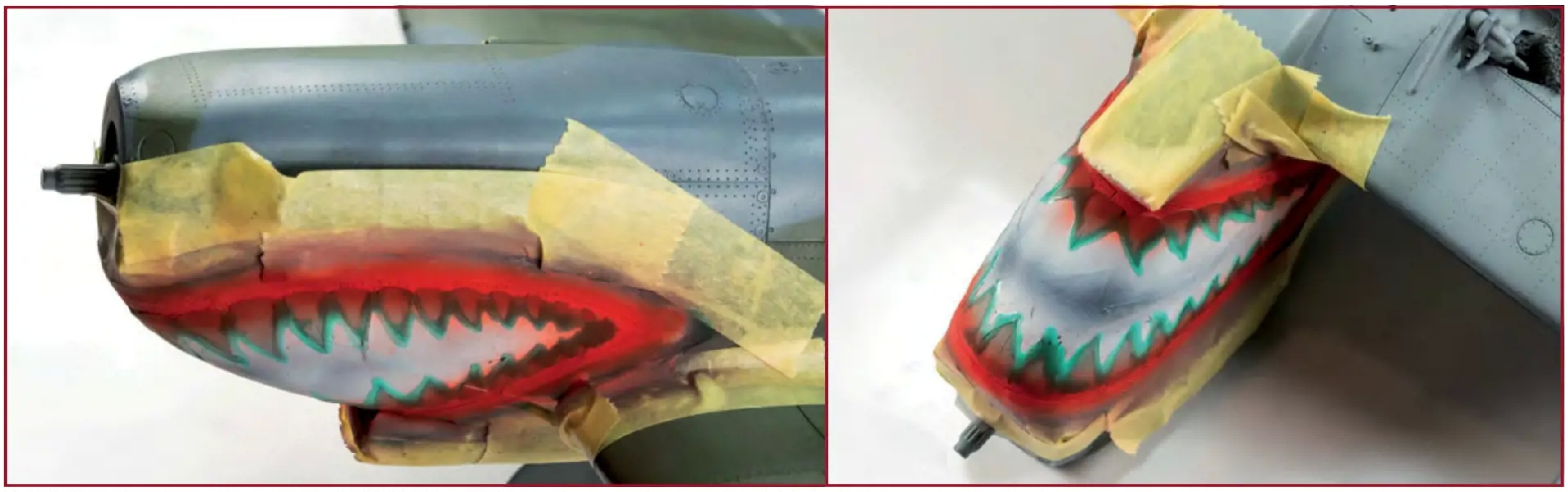

The first step was to lay down the outer borders of the shark mouth


LP-3 Flat Black was used as the base layer

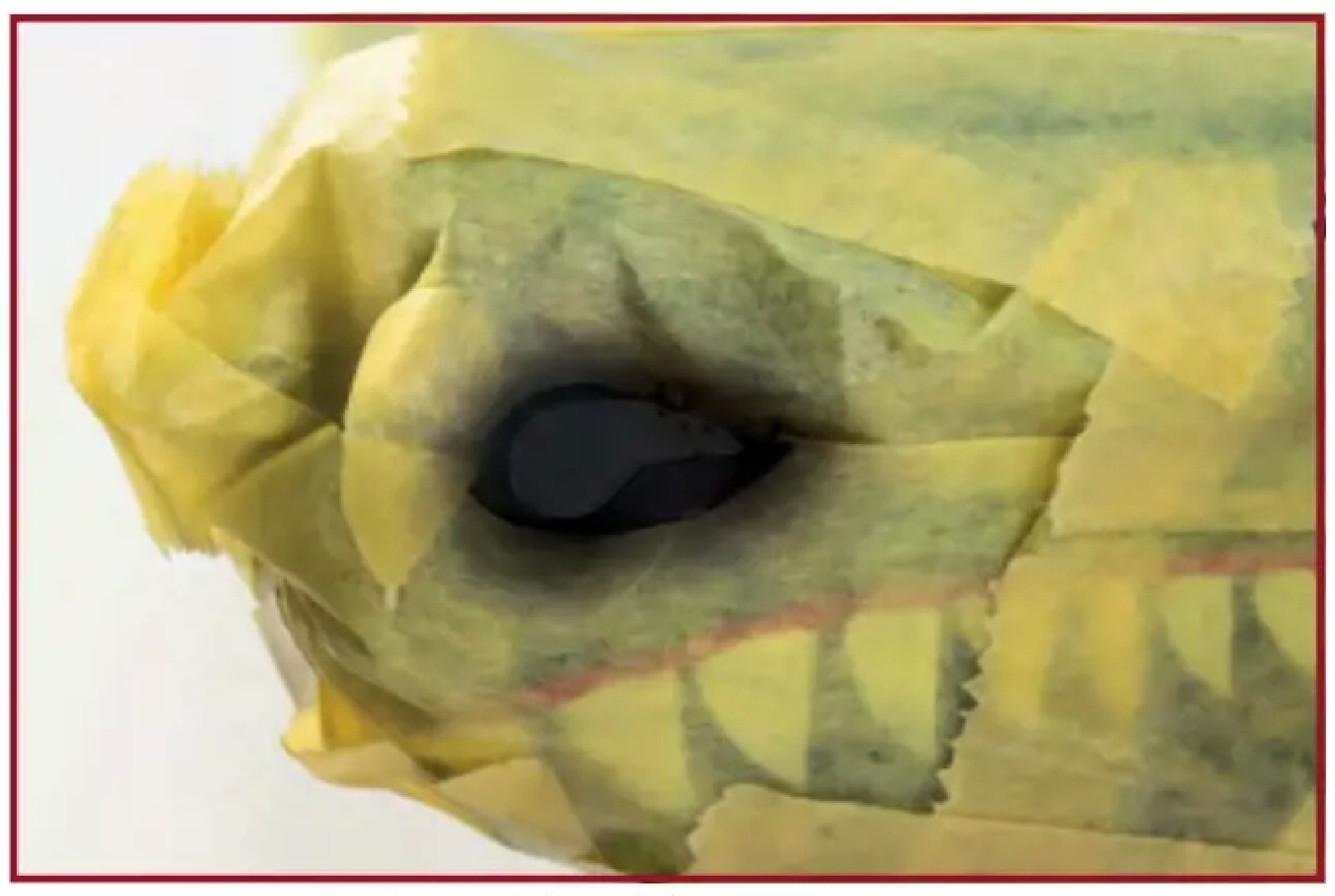

Black areas were then masked away being the outer edge and the main inner area of the mouth. Mr Masking Sol Neo was used to fill in gaps between sections of masking material



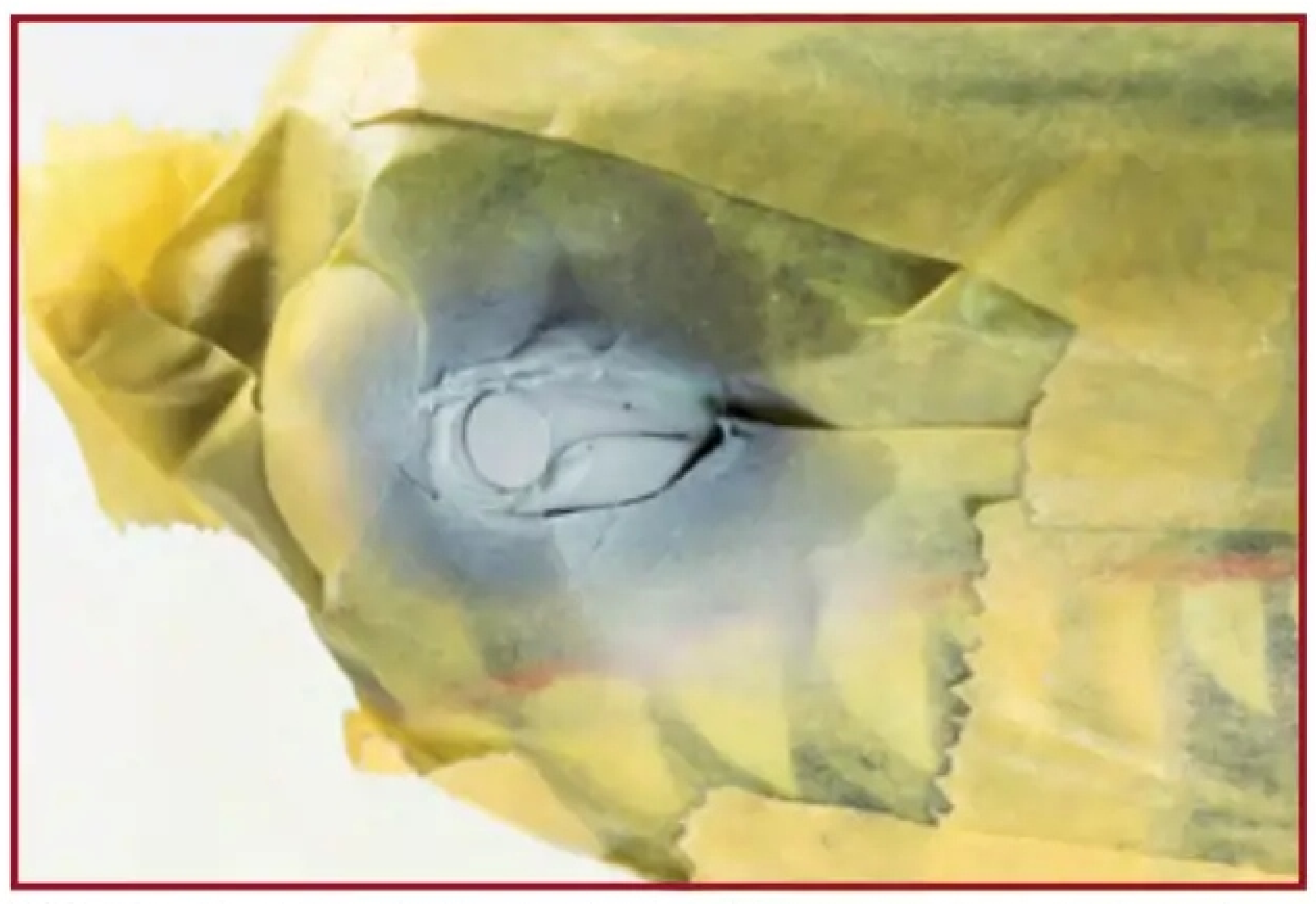
LP-4 Flat White was then applied for the teeth and as a base for the red to follow



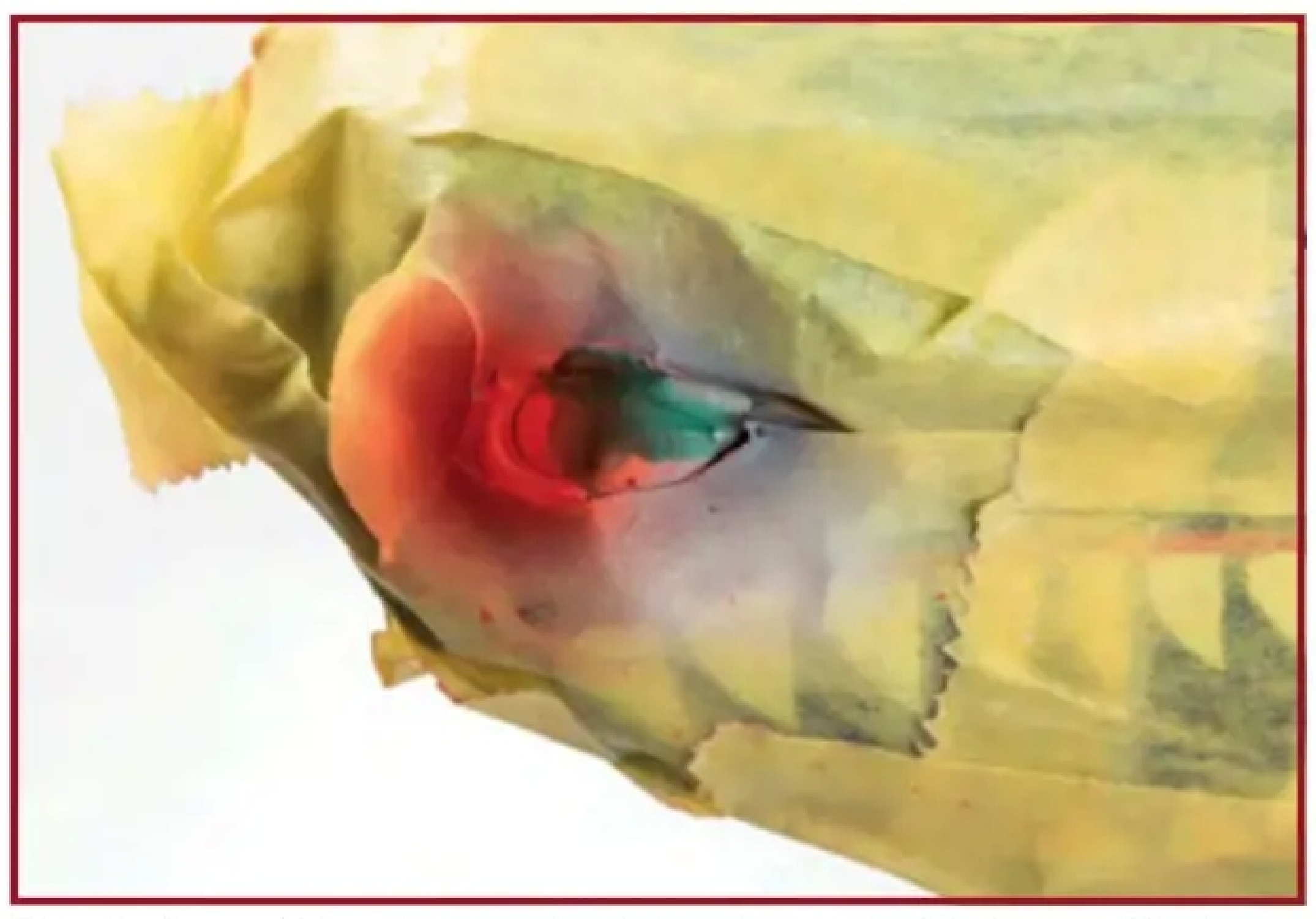
Each individual tooth was then masked with Mr Masking Sol Neo applied to the joints, before XF-7 Flat Red was airbrushed for the gums



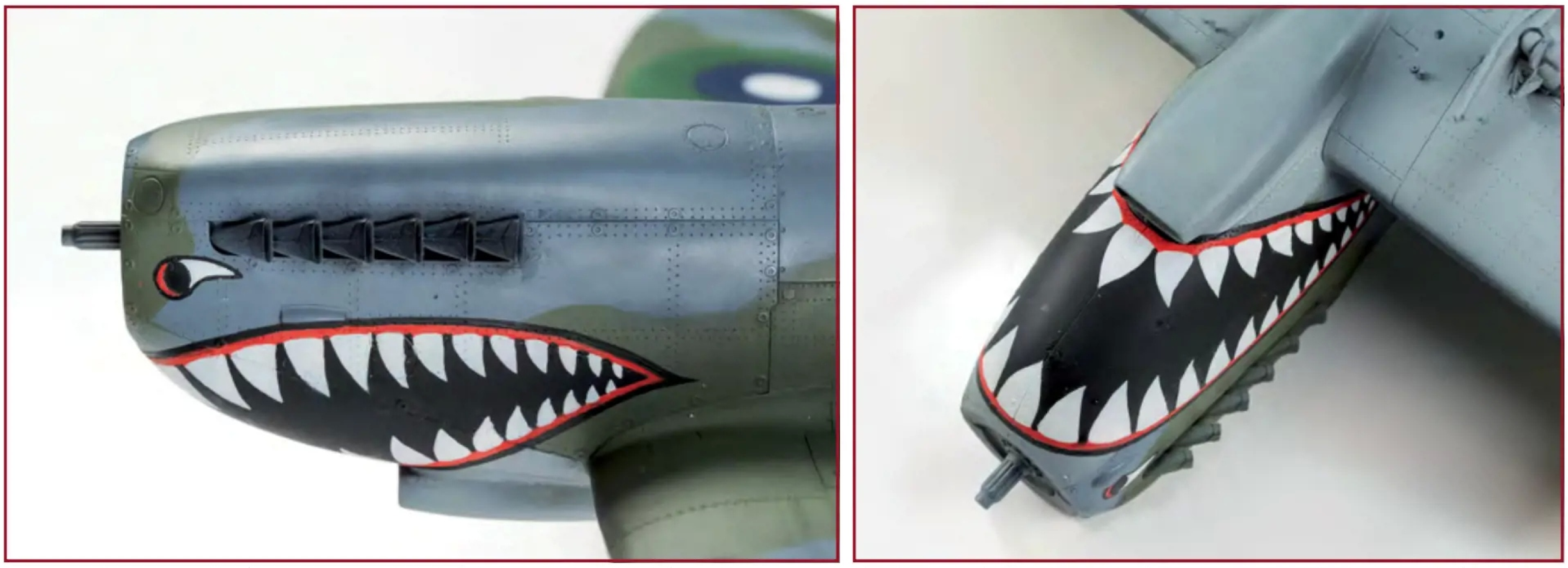
The eye was next. I expected this to be a challenge since parts of the masks were tiny. Again I started with the border and painted black as the first colour



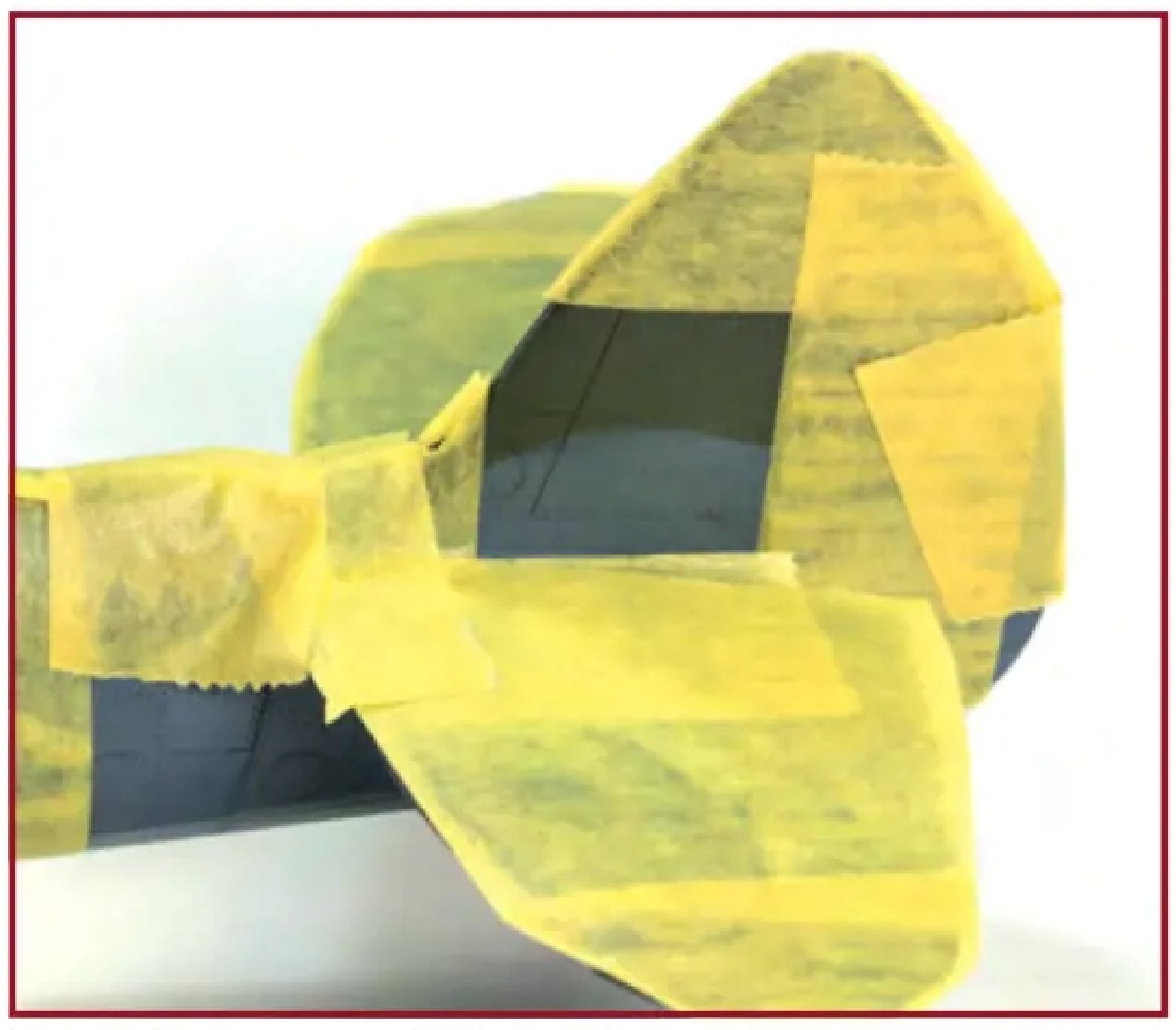
With the black eyeballs masked, white was airbrushed next



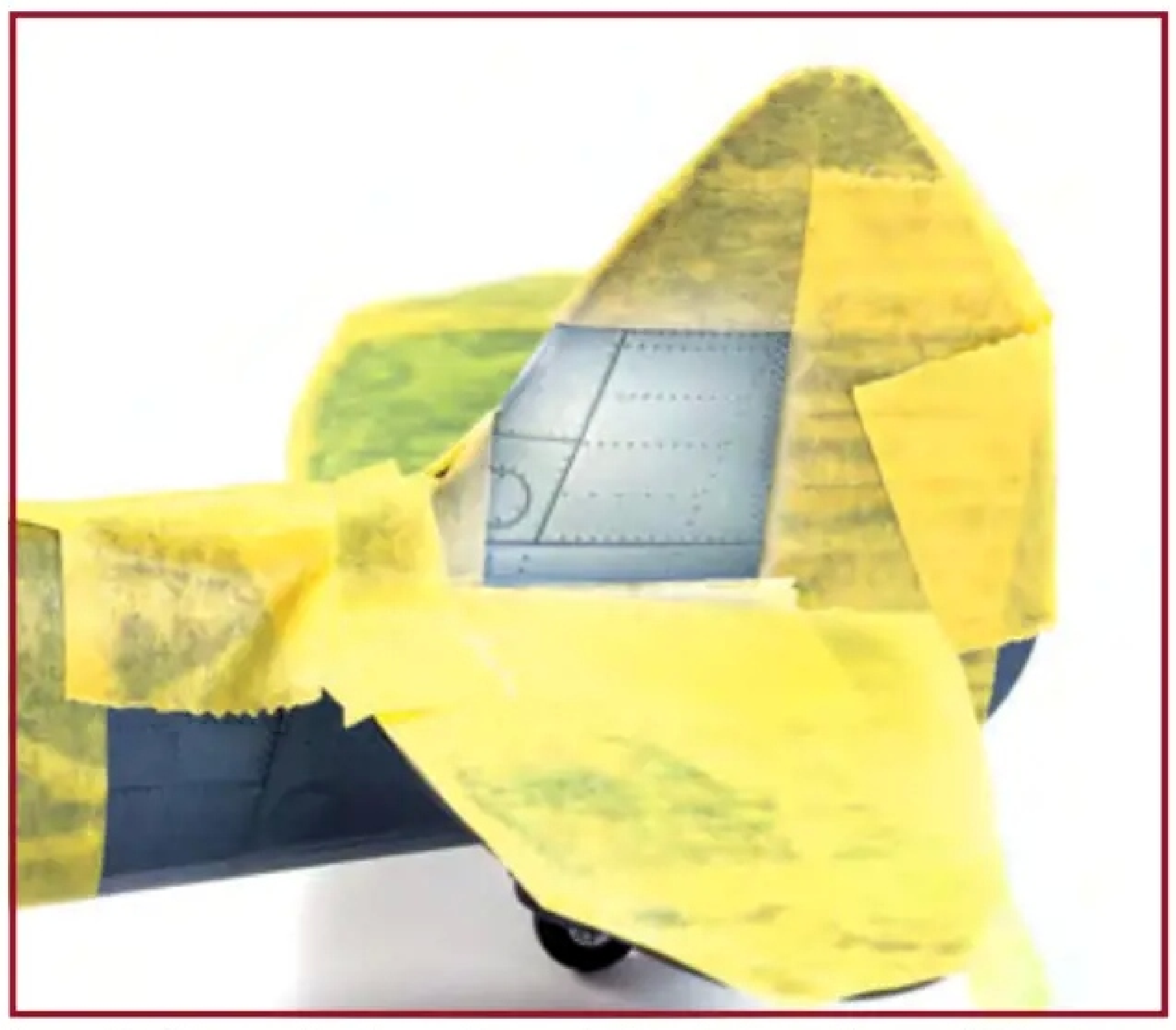
Finally the white was masked and the red detail was filled in



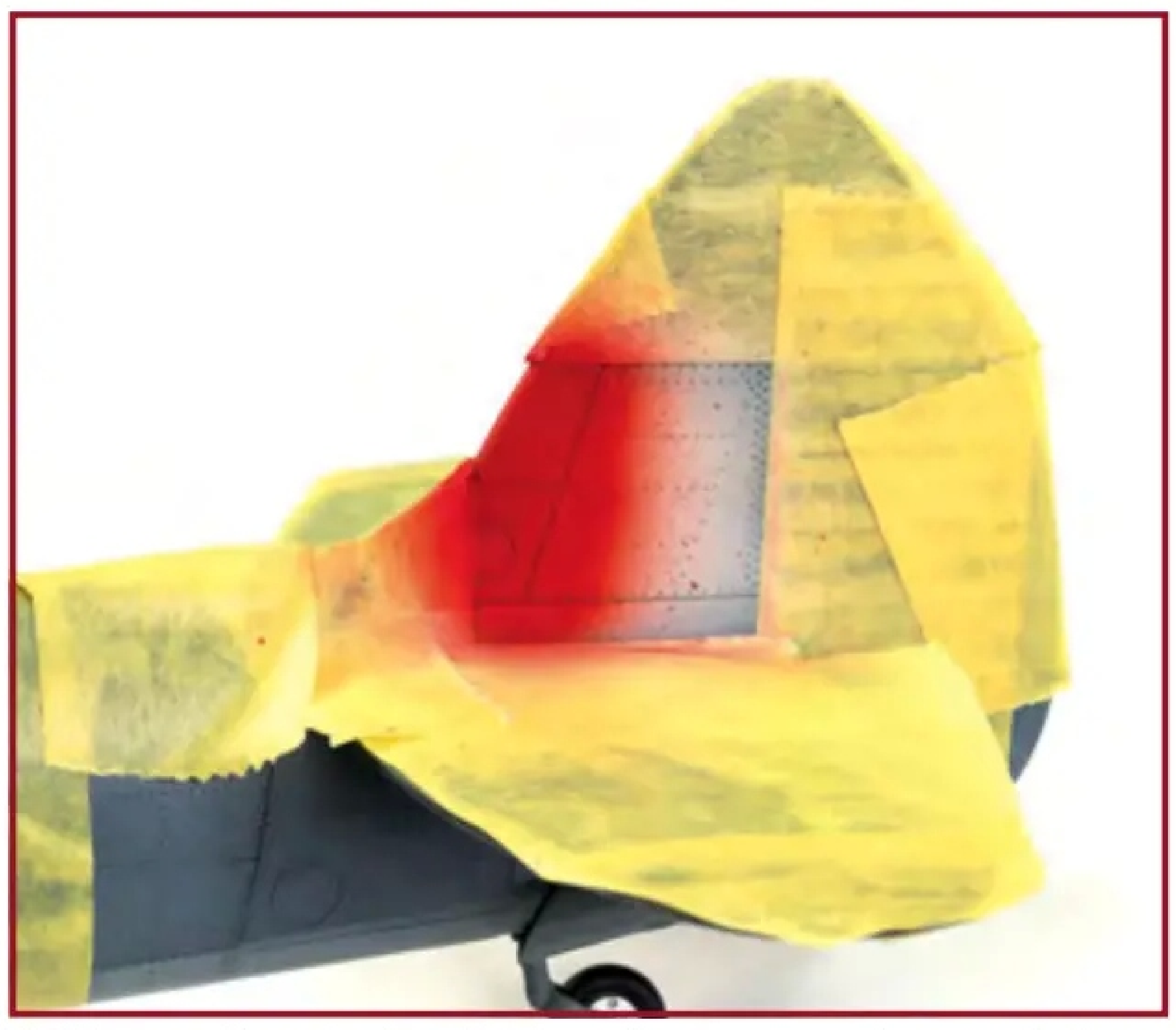
I chose Tamiya paints as I had their enamel equivalents, which made manual brush touch-ups easier. The final result, embracing some minor imperfections which lend some credibility compared with laser-perfect decals



The fin flash was masked according to dimensions taken from the decal sheet



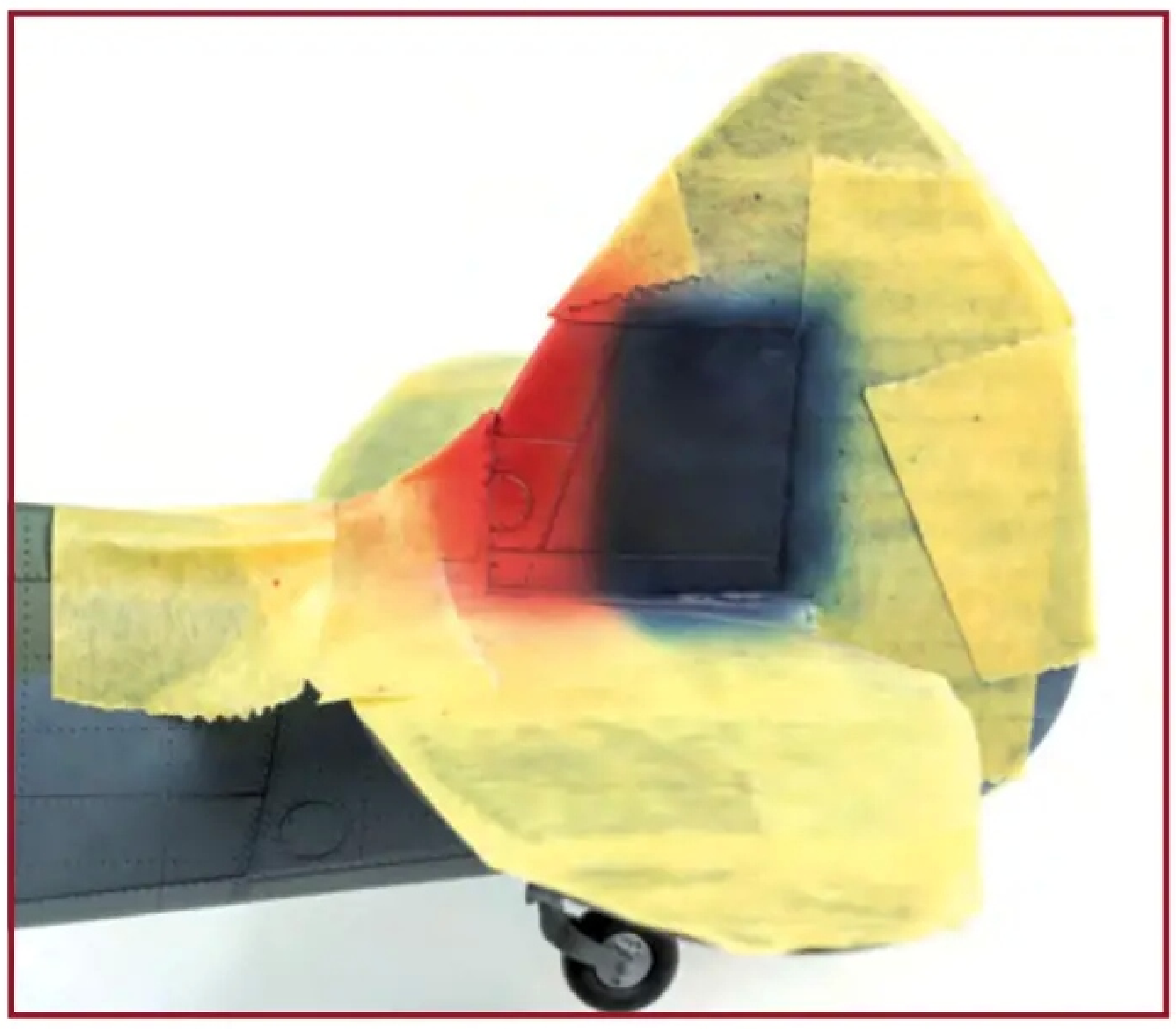
I used white as the base layer, trying to keep it very light at the edges



XF-7 was airbrushed as the base layer as my plan was to have some red showing through the final white

TAMIYA COLOR
LACQUER PAINT
LP-4
フラットホワイト
つや消し
TAMIYA
ラッカー塗料
FLAT WHITE
Mr. HOBBY
326
Mr.COLOR
光沢
GLOSS
ブルー FS15044
BLUE FS15044

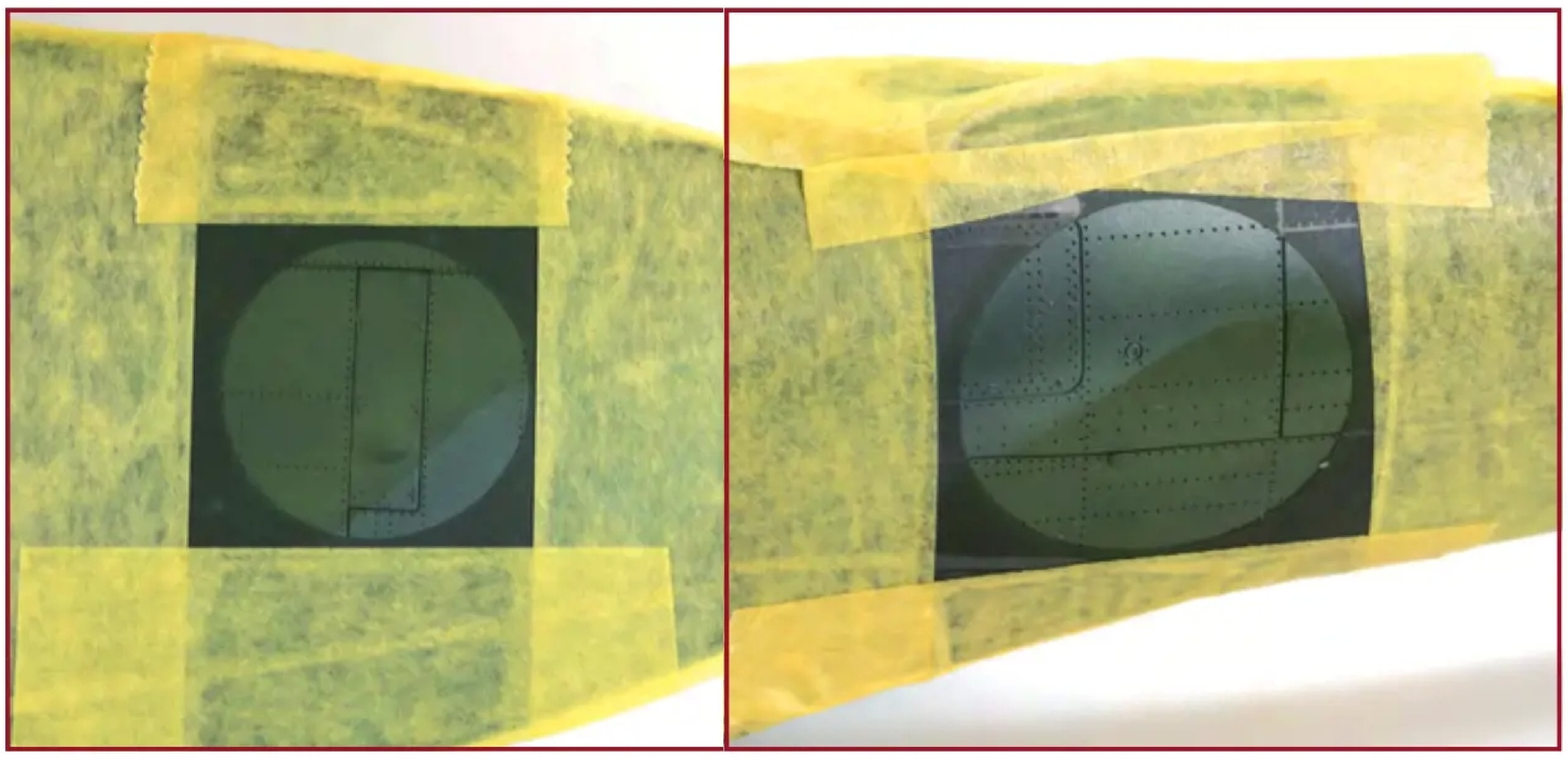
Along with LP-4 Flat White, Mr Color C326 Blue FS 15044 was used for the dark blue areas in the fin flash and insignias



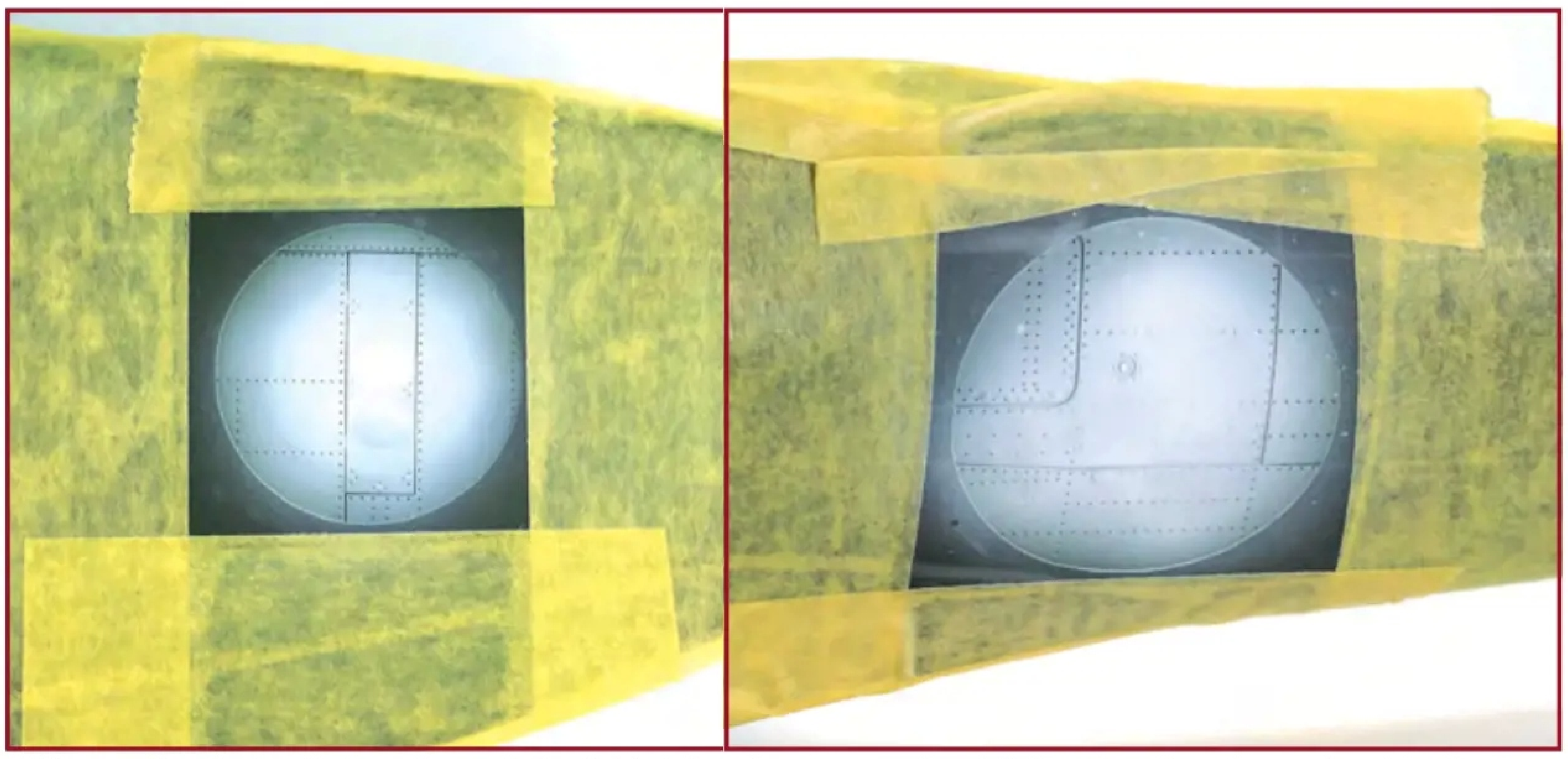
The blue of the fin flash was airbrushed, then textures added with white acrylic paint before a thin top layer was airbrushed to allow some of the pre-shading to show through

The fin flash was next. References show wear-through of the white paint on the tail's leading edge to expose the underlying original RAF red. To replicate this, after masking the area with Tamiya tape to copy the size of the kit decal, I started with a thin base layer of LP-4 Flat White, staying very light at the borders to prevent a white line when masks were to be removed. XF-7 Flat Red was then applied to the front portion. The blue was then airbrushed in two layers with acrylic paint texturing as a middle step as had been done on the main airframe, using Mr Color C326 Blue FS15044. I then airbrushed a sealing coat of Alclad Aqua Gloss and once dry, hairspray was airbrushed over the red with a view to chipping back the eventual white top layer.

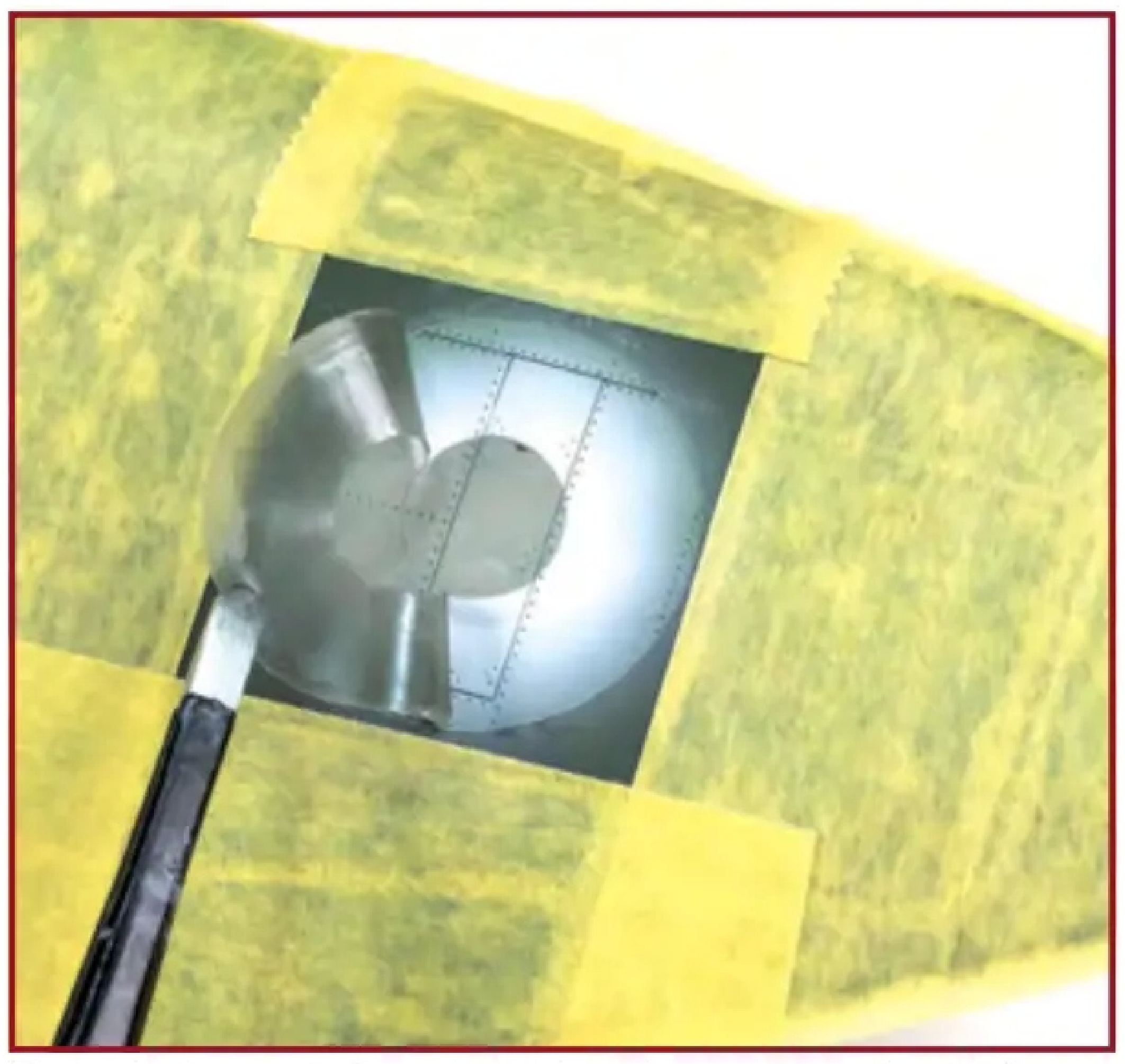
Preparing for painting of the RAAF roundels, the main full-sized circle mask was placed in the dead centre of the overpainted areas on the upper wings and fuselage sides, and in the relevant final positions on the lower wings. The outer border mask was then easily placed before the inner circles were removed. LP-4 was lightly airbrushed, concentrating the density of the white at the centres as the eventual final colour, and staying light around the edges to prevent show-through at the final borders. The full circle masks were then placed back, followed by the centre solid circles to mask the white centres. The main circles were then removed again before following through with two layers of C326 with acrylic paint textures in between. Removing the masks, the result was a pleasing, modulated effect to the paint which could not have been achieved with monochromatic decals. ■



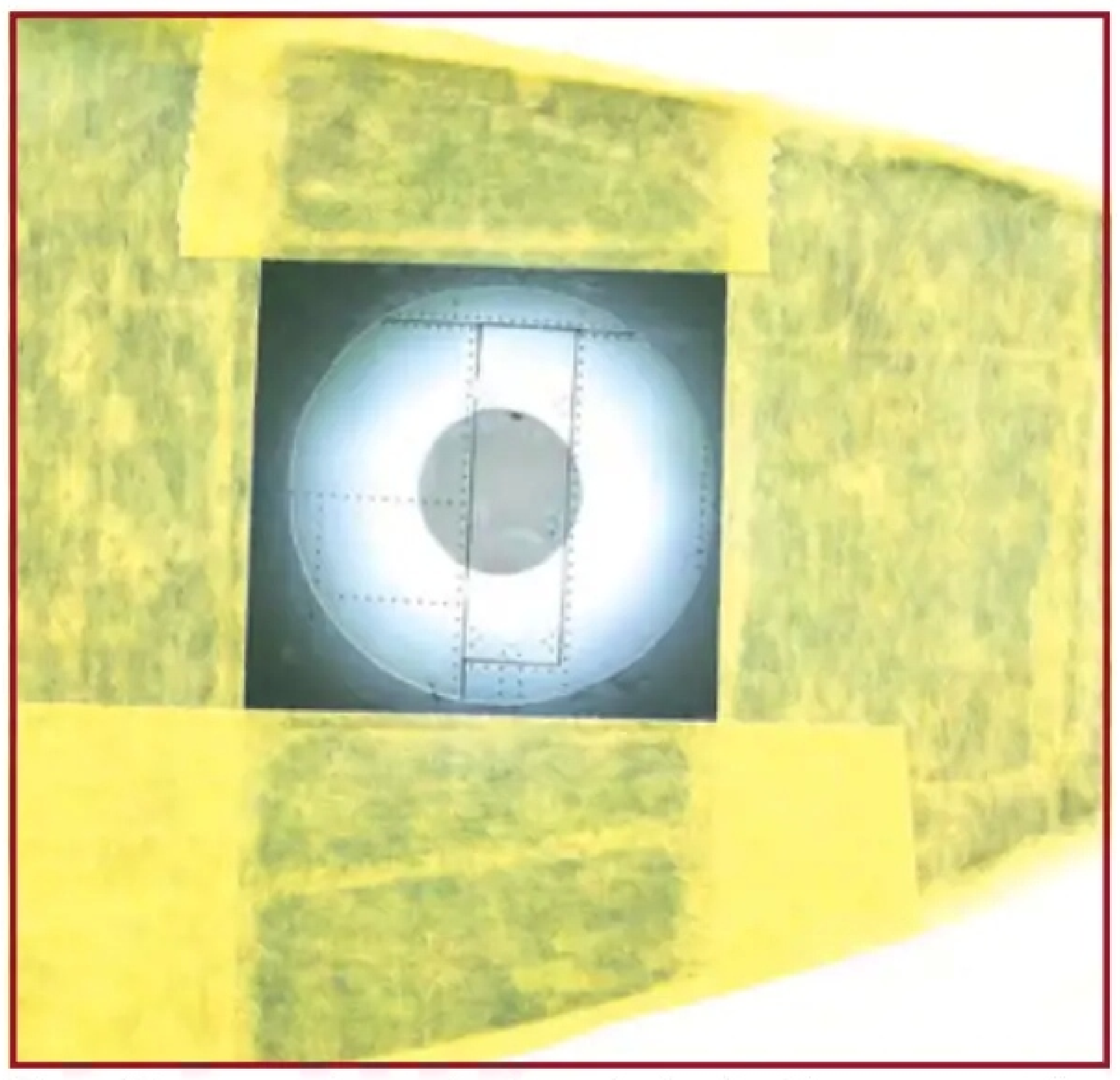
After laying down the inner roundel circles in the centre of the overpainted areas, the mask outline borders were positioned ready for painting of the roundels



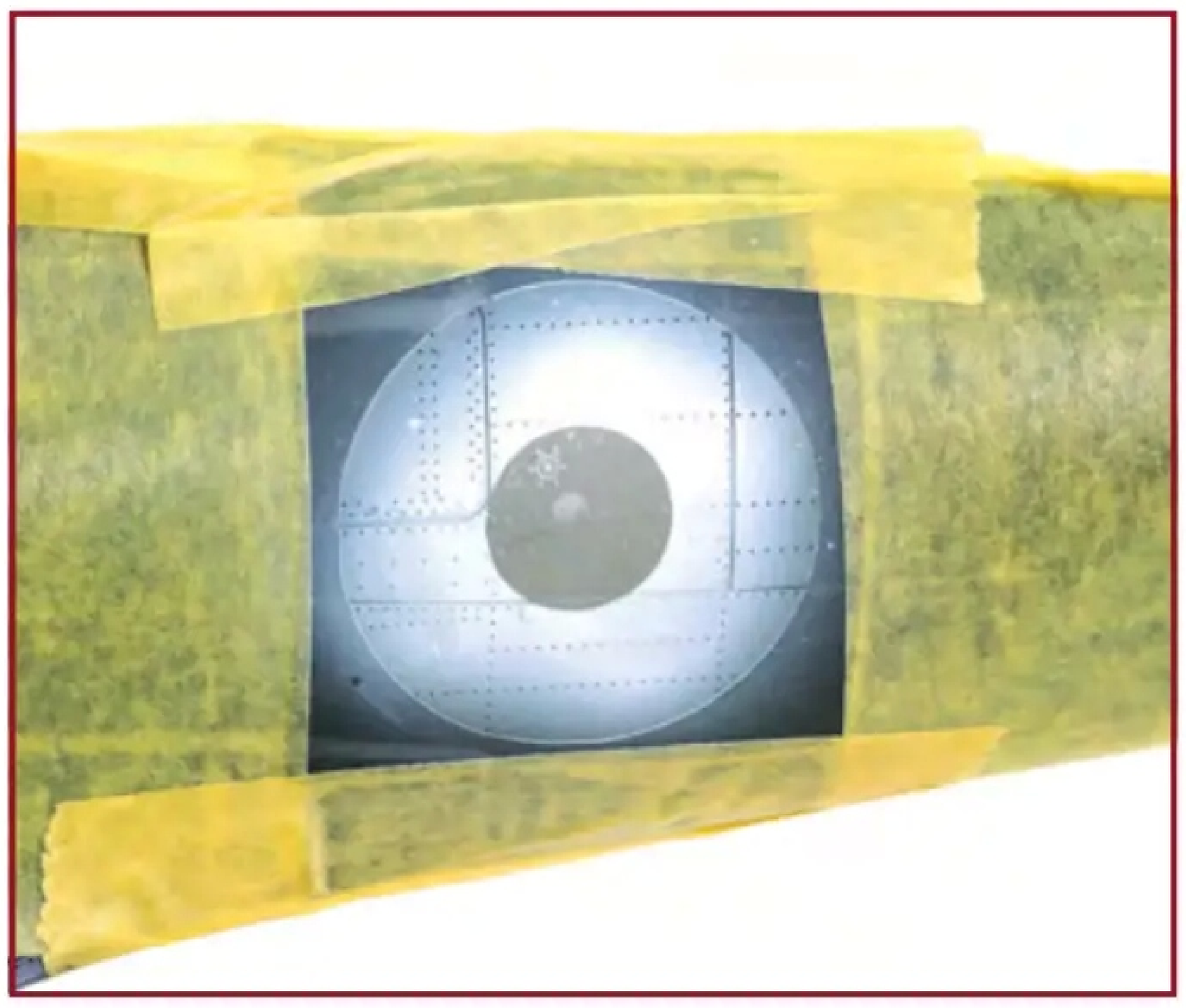
LP-4 was airbrushed as the base layer, staying light at the edges to prevent a white line along the edge, and applying it more densely in the centre where it will be the final colour

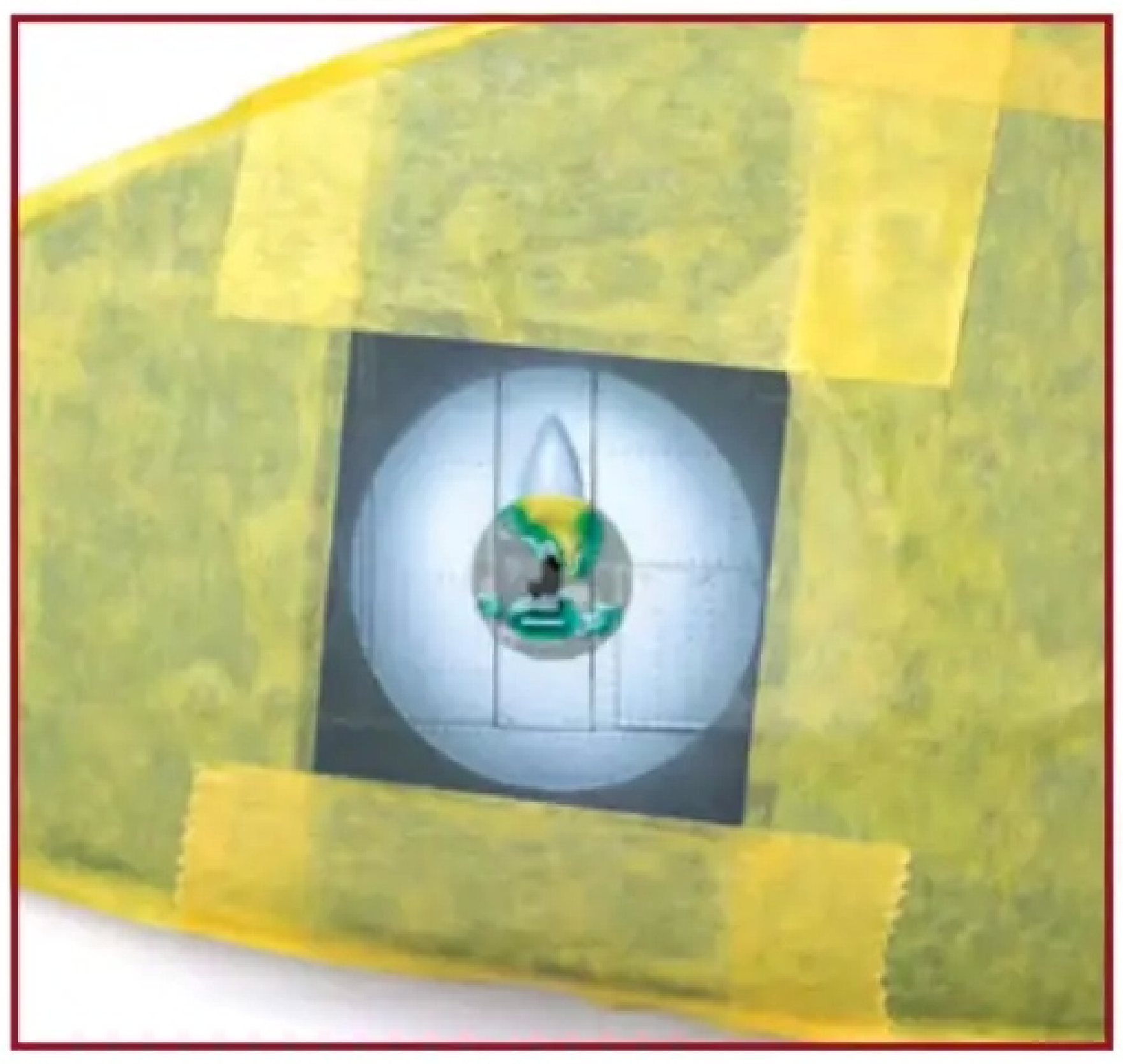


To apply the central mask portion, the outer mask was first applied as a guide

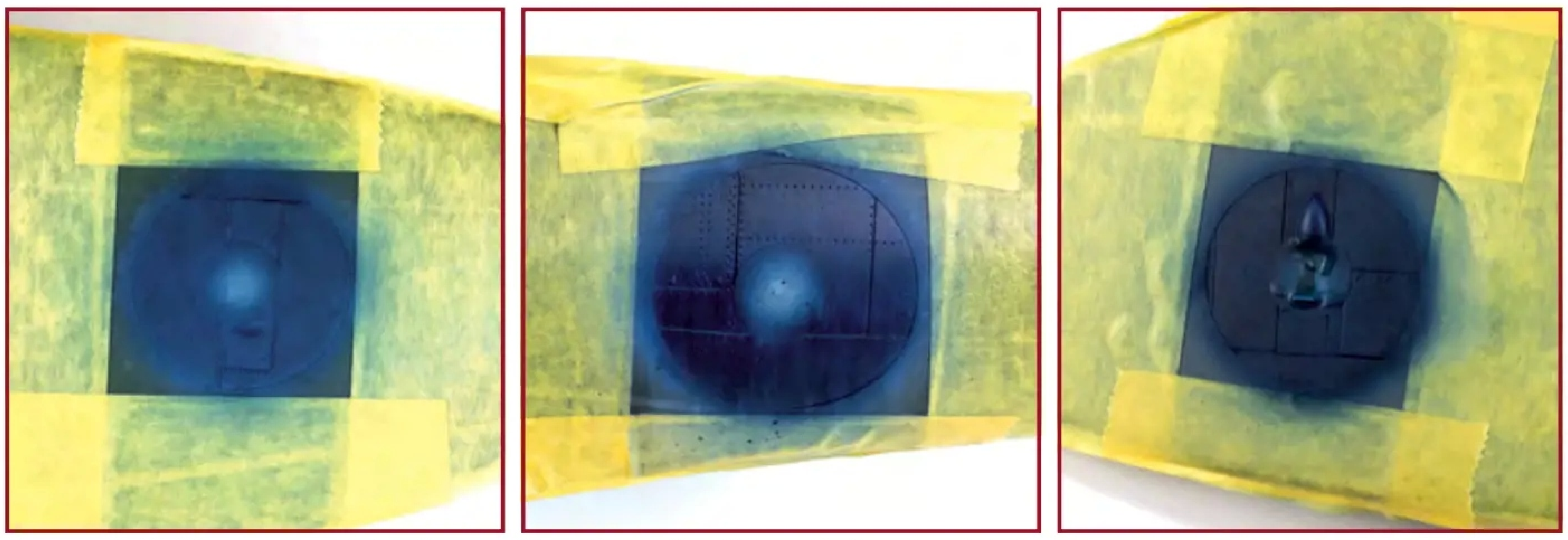


The white centre is masked, ready for the blue outer portion

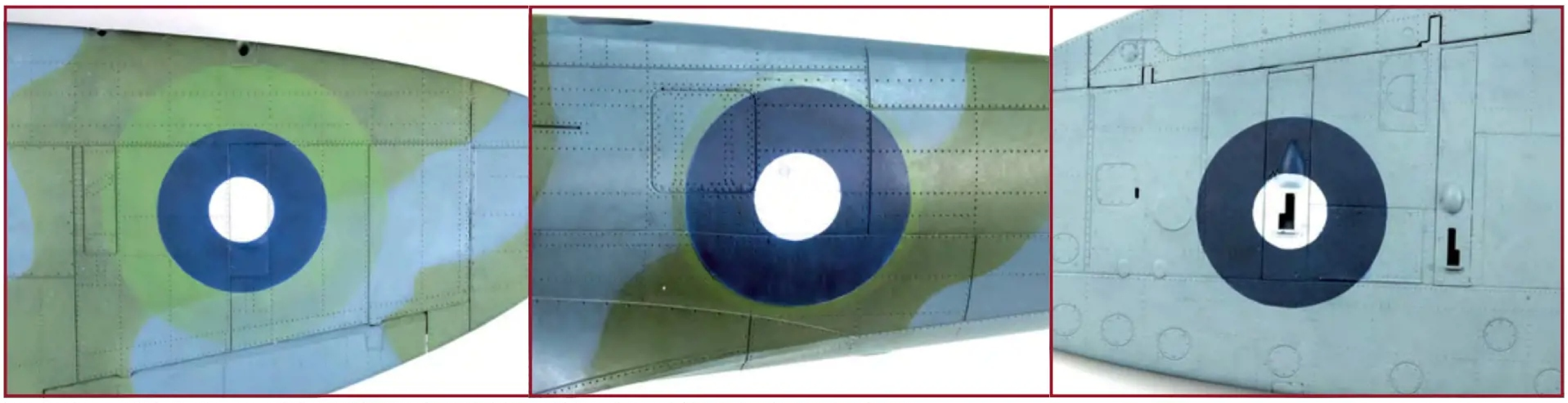




The lower wing roundels go over an uneven surface so liquid mask is useful to help where masking material needs to be cut to allow it to conform around shapes



Once again the blue was done in two layers, with white acrylic paint pre-shading done in between



The final roundels looked neat and showed the shade modulation which makes painting better than using decals

NEXT TIME

NEXT TIME MARK COMPLETES HIS GREY NURSE SPITFIRE MK.VIII

Kinetic Model Kits 1:48 Sea Harrier FA2 • Item No. K48041

FLYING FIST

The Editor takes a step back in time to 2014 to revisit his Kinetic Models' 1:48 scale Sea Harrier FA2.

The British Aerospace Sea Harrier is a naval short take-off and vertical-landing/vertical take-off and landing jet fighter, reconnaissance and attack aircraft, a development of the Hawker Siddeley Harrier. It first entered service with the Royal Navy in April 1980 as the Sea Harrier FRS1 and became informally known as the "Shar".

Unusual in an era in which most naval and land-based air superiority fighters were large and supersonic, the principal role of the subsonic Sea Harrier was to provide air defence of the fleet from Royal Navy aircraft carriers.

The Sea Harrier served in the Falklands War, both of the Gulf Wars, and the Balkans conflicts; on all occasions it mainly operated from aircraft carriers positioned within the conflict zone. Its usage in the Falklands War was its most high profile and important success, where it was the only fixed-wing fighter available to protect the British Task Force. The Sea Harriers shot down 20 enemy aircraft during the conflict with one lost to enemy ground fire. They were also used to launch ground attacks in the same manner as the Harriers operated by the Royal Air Force.

The Sea Harrier was marketed for sales abroad, but by 1983 India was the only operator other than Britain after sales to Argentina and Australia were unsuccessful. A second, updated version for the Royal Navy was made in 1993 as the Sea Harrier FA2, improving its air to air abilities and weapons compatibilities, along with a more powerful engine; this version continued manufacture until 1998.

The aircraft was withdrawn early from Royal Navy service in March 2006 and replaced in the short term by the Harrier GR9, now itself retired, although the intended long term replacement is Lockheed Martin's F-35 Lightning II.

The Sea Harrier is in active use in the Indian Navy, although it will eventually be replaced by the Mikoyan MiG-29K. Although withdrawn from active Royal Navy service, Sea Harriers are used to train naval aircraft handlers at the Royal Navy School of Flight Deck Operations.*

IN THE BOX

Kinetic's 1:48 scale Sea Harrier FA2 is only the second Sea Harrier FA2 available in 1:48 scale, the first being an Airfix kit released in 1997, which was itself based on the early 1980s-vintage Sea Harrier FRS.1.

Kinetic's Sea Harrier FA2 comprises 243 parts in light grey plastic, 16 parts in clear and a small photo-etched fret. Markings for 28 aircraft are included.

Surface detail looks very nice, with recessed panel lines, vents and rivets over the airframe.

Moulding quality is high, with minimal ejector pin circles, seam lines or sink marks. Some of the moulding is really clever too, notably the one-piece nozzles. All four nozzles are connected by a mechanism that should, if installed carefully, make them all rotate to the same angle simultaneously.

Cockpit detail is nice straight from the box, with raised detail on the side consoles and instrument panels; and excellent moulding on the sides of the ejector seat. You'll need to BYO harness straps though.

The canopy is split into windscreen and opening section. The latter features the prominent detonation chords moulded into the top.

The stressed metal effect on the nozzle blast shields looks great.

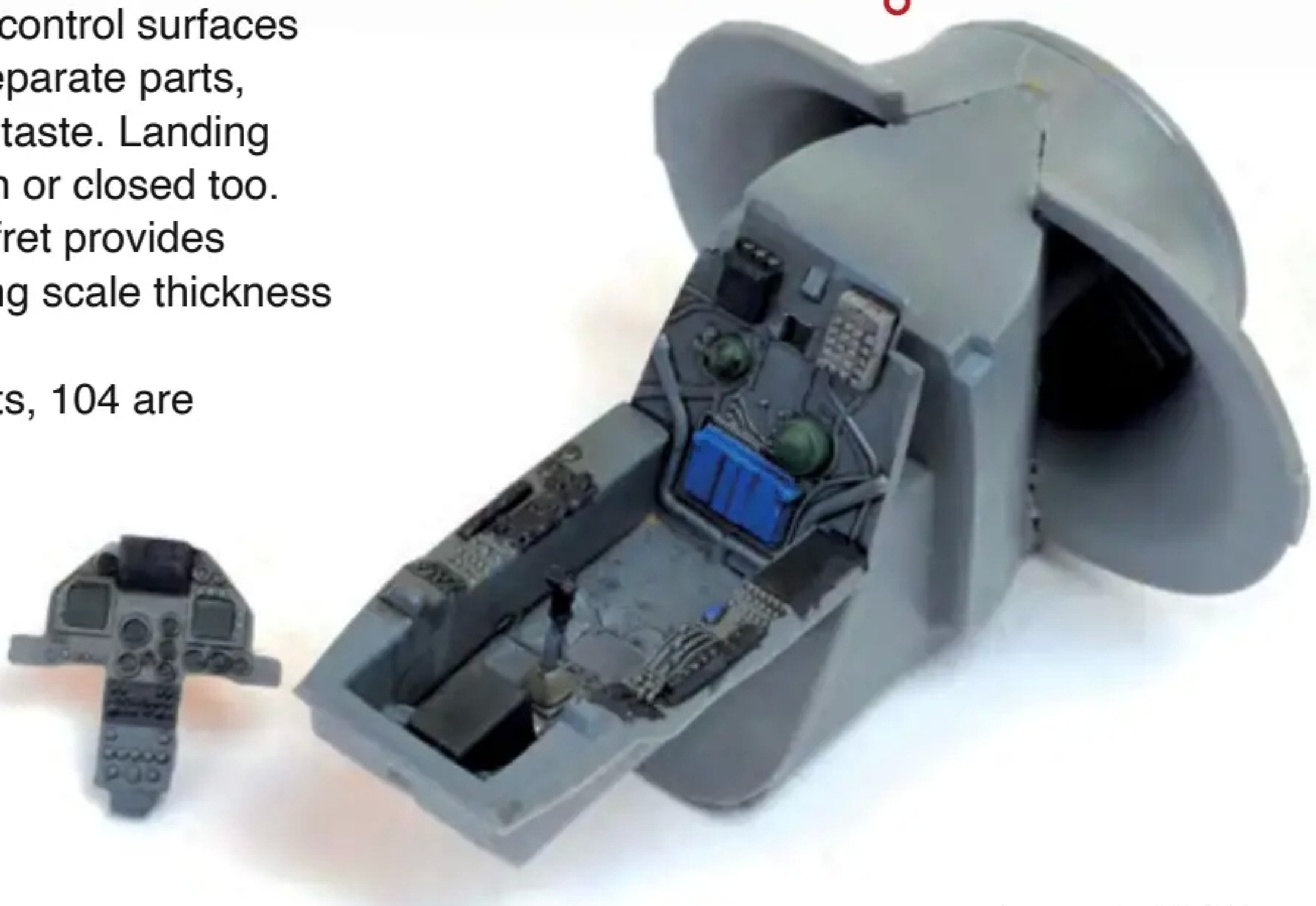
Optional parts are provided for open or closed auxiliary blow in doors; open or closed air brakes; and the control surfaces and flaps are all offered as separate parts, allowing them to be posed to taste. Landing gear doors may be fixed open or closed too.

The modest photo-etched fret provides additional detail parts including scale thickness wing fences.

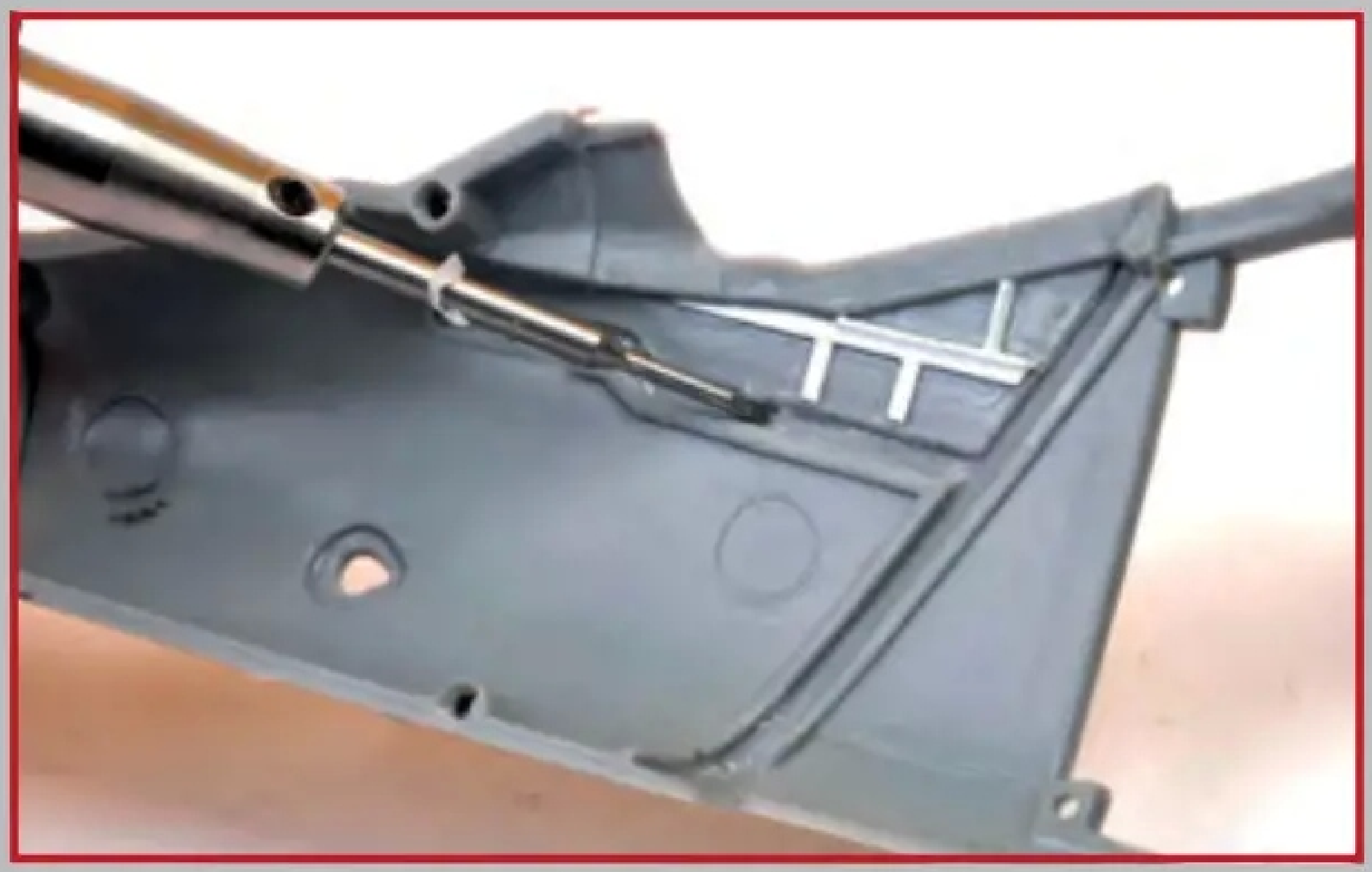
Of the 243 grey plastic parts, 104 are dedicated to ordnance.

On the two ordnance sprues you will find AIM-120 AMRAAM, AIM-9L Sidewinder and Sea Eagle missiles plus pylons and tanks of various sizes. ▶

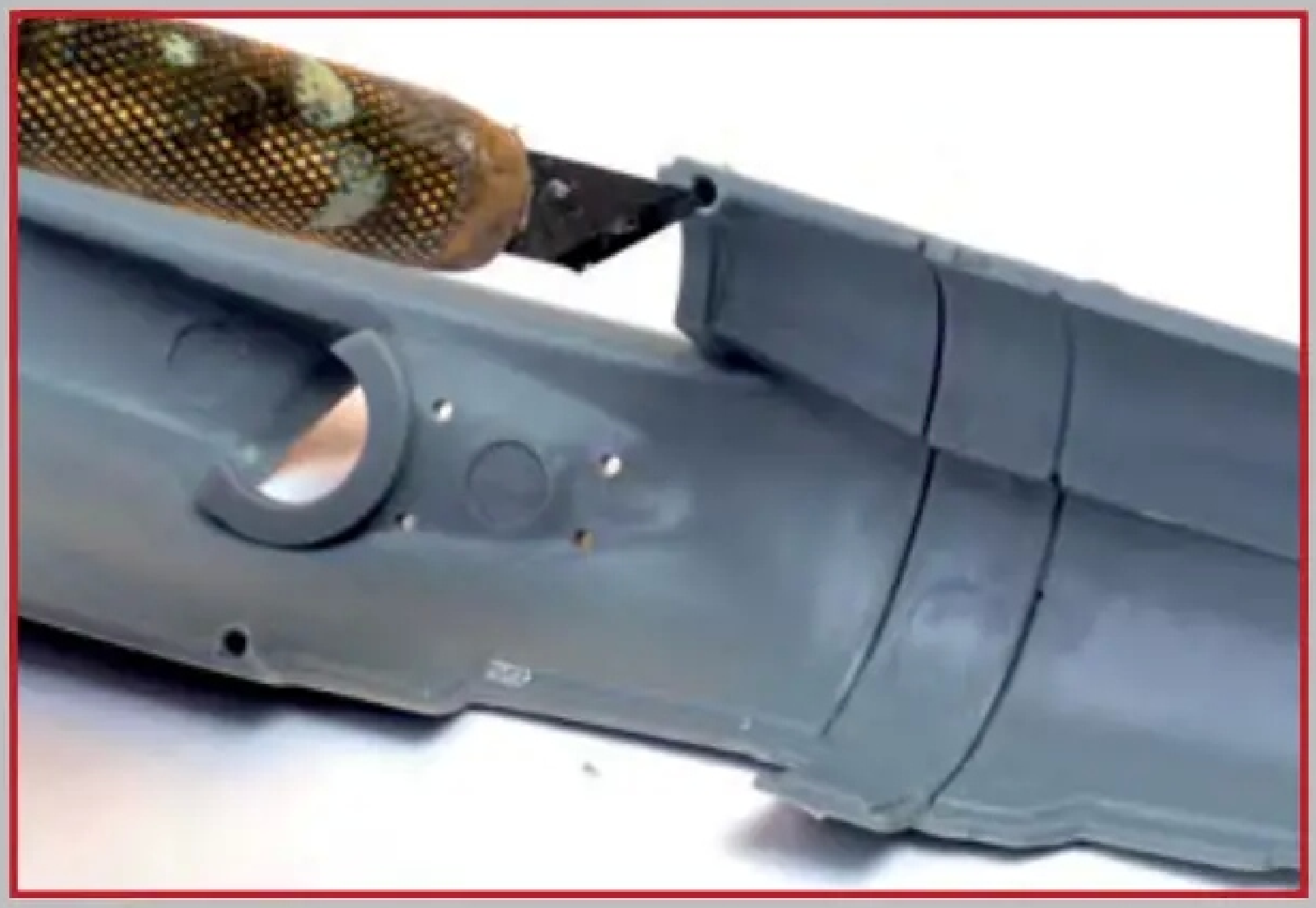
An old Aeroclub ejection seat replaced the kit seat.



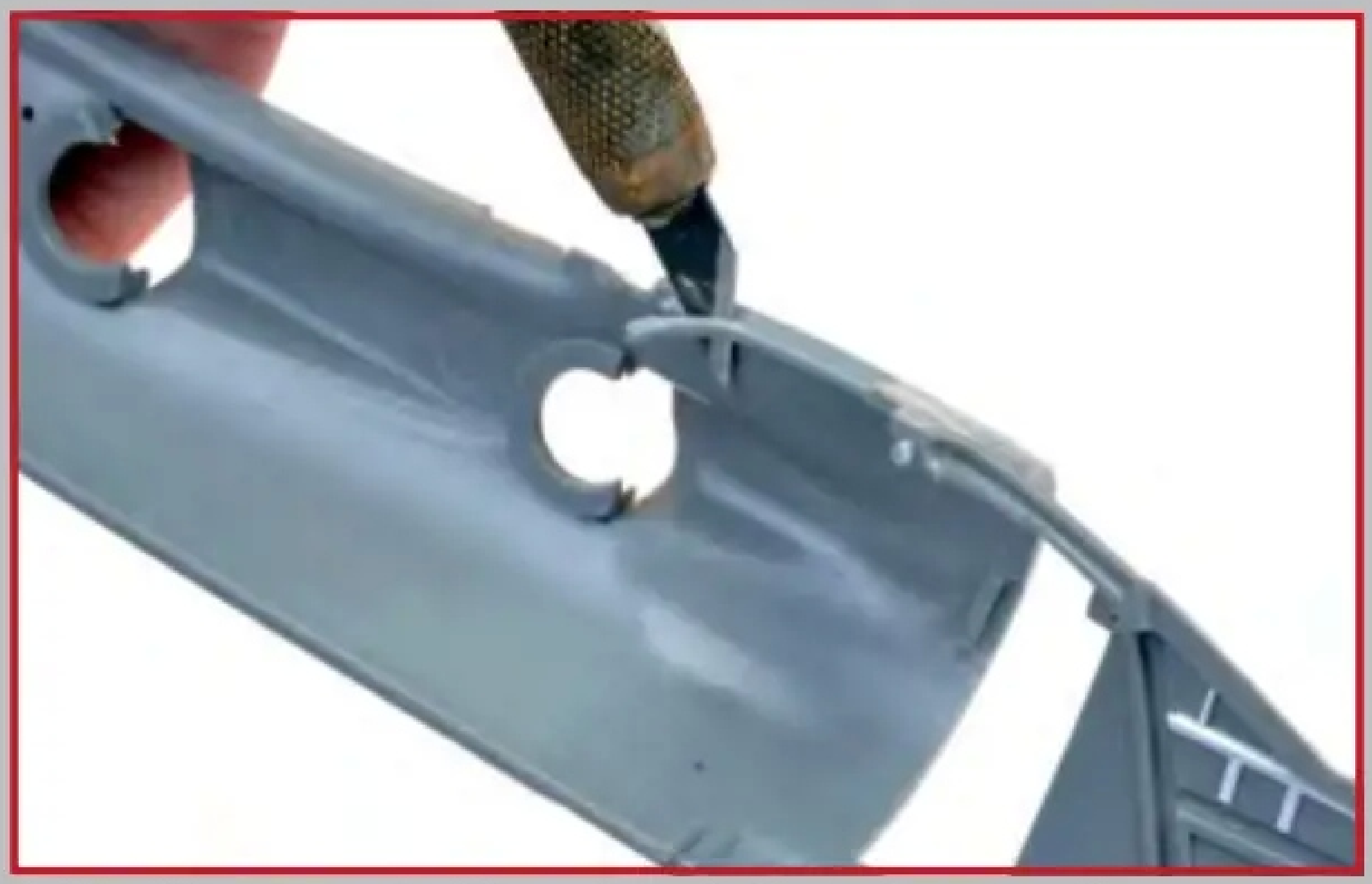
The kit cockpit and instrument panel were used.



Plastic strip lent some extra detail to the upper sidewalls. A micro-chisel was used to remove excess plastic from the locating groove on the inside of the cockpit.

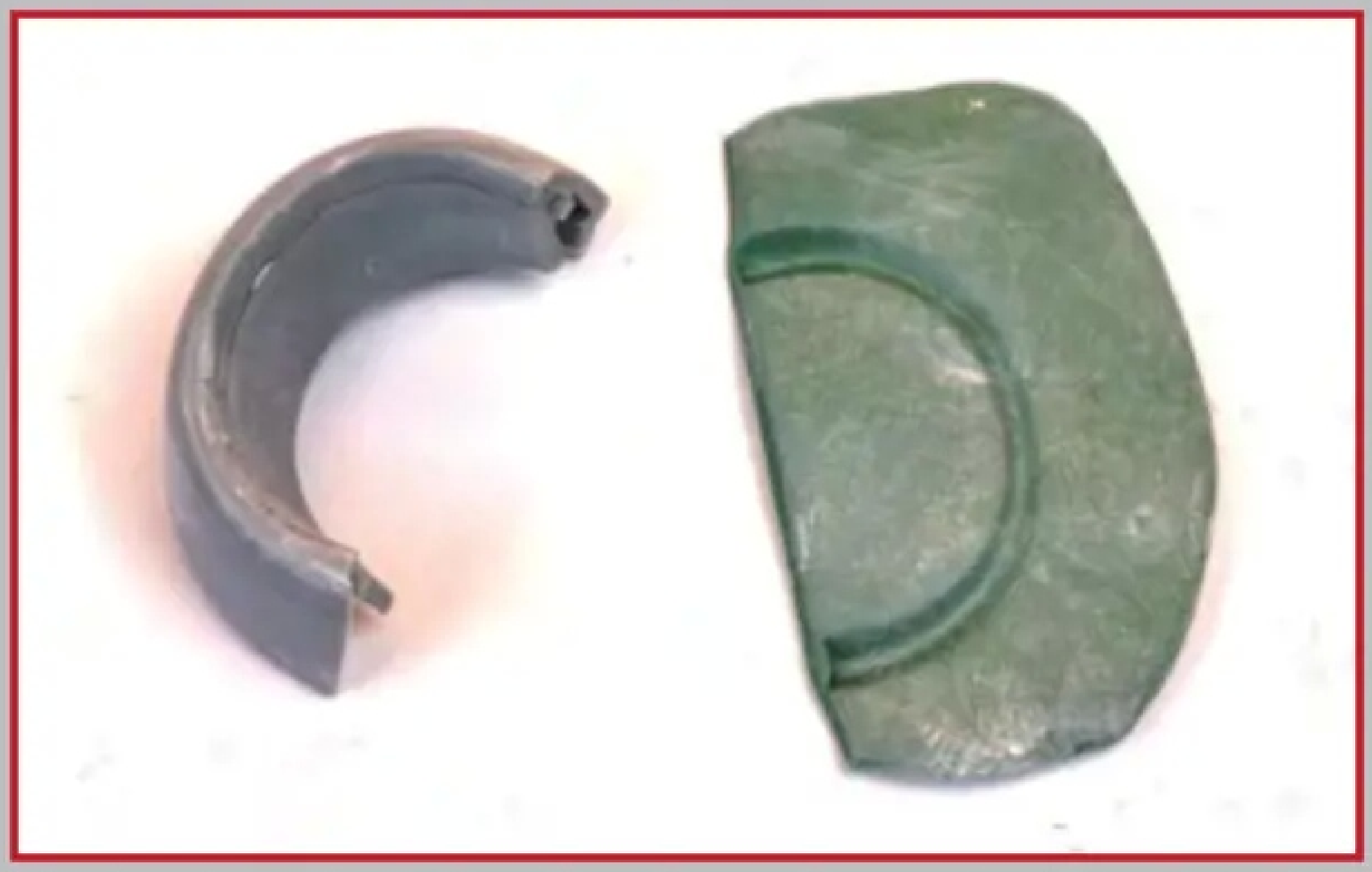


Some of the locating holes needed to be hollowed out further.

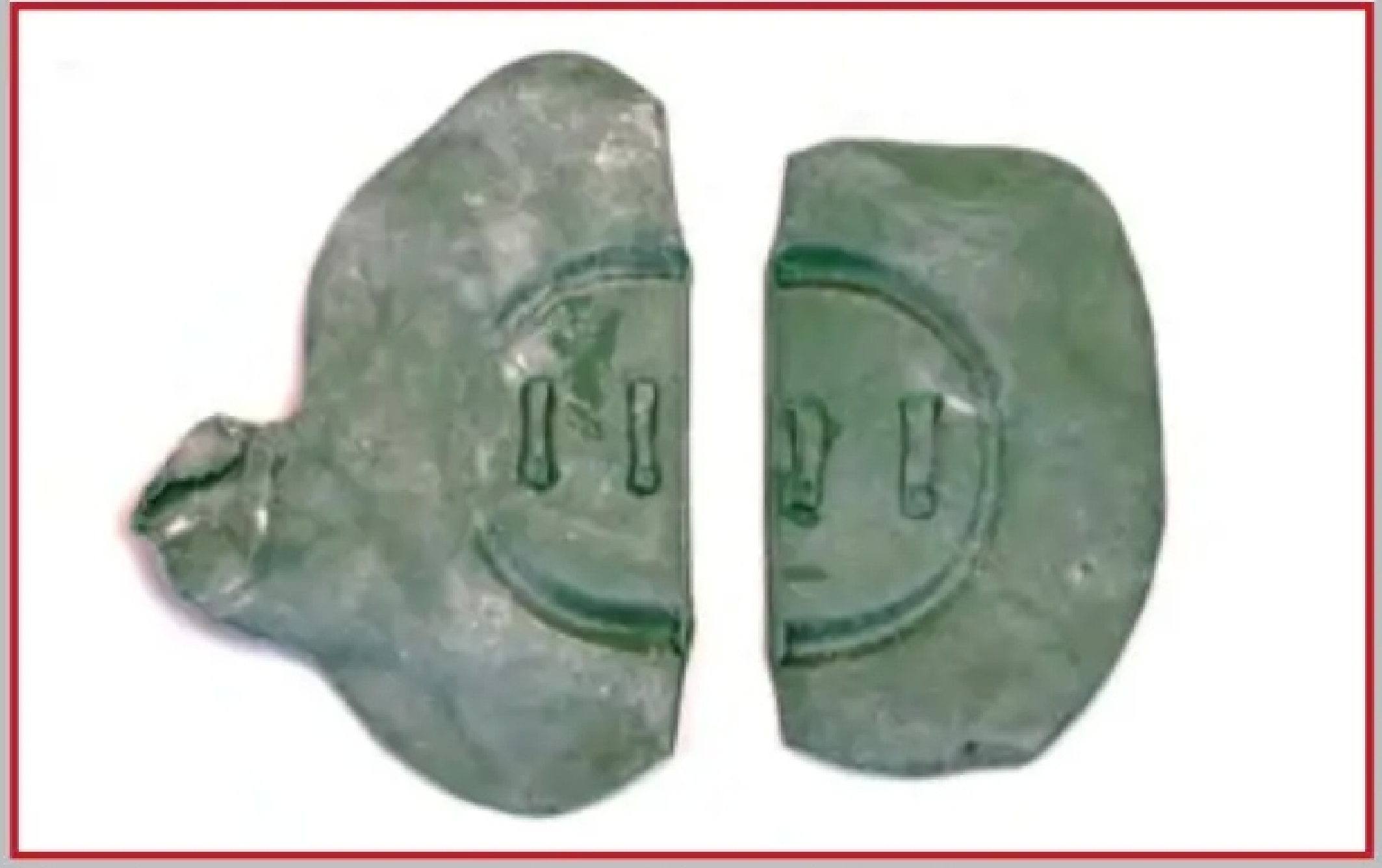


A bit of time spent with a sharp knife to improve fit.

Green Stuff Is a two-part epoxy putty.

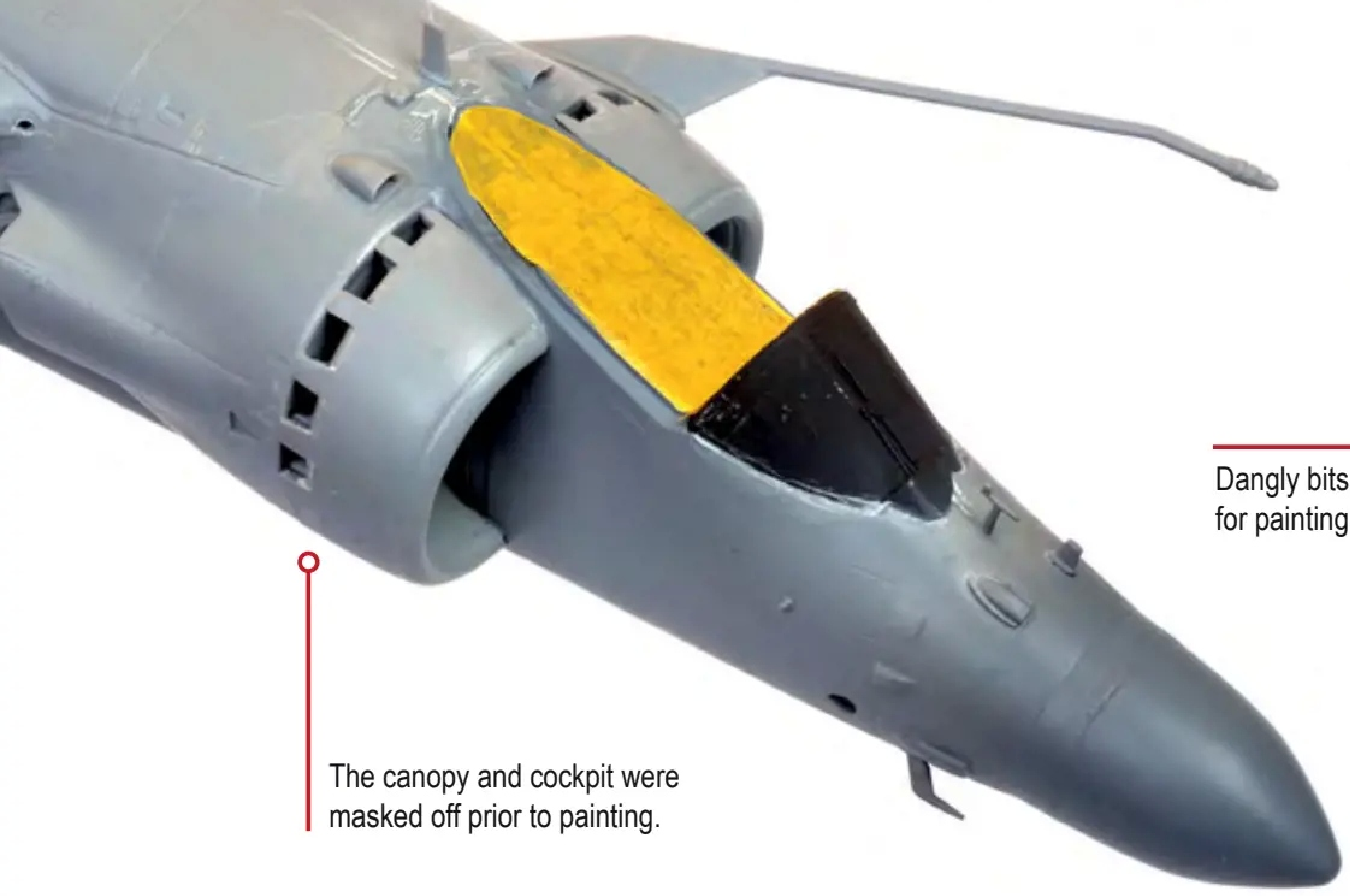


The leading edge of the intake was pressed into the putty to create the shape of the intake covers.

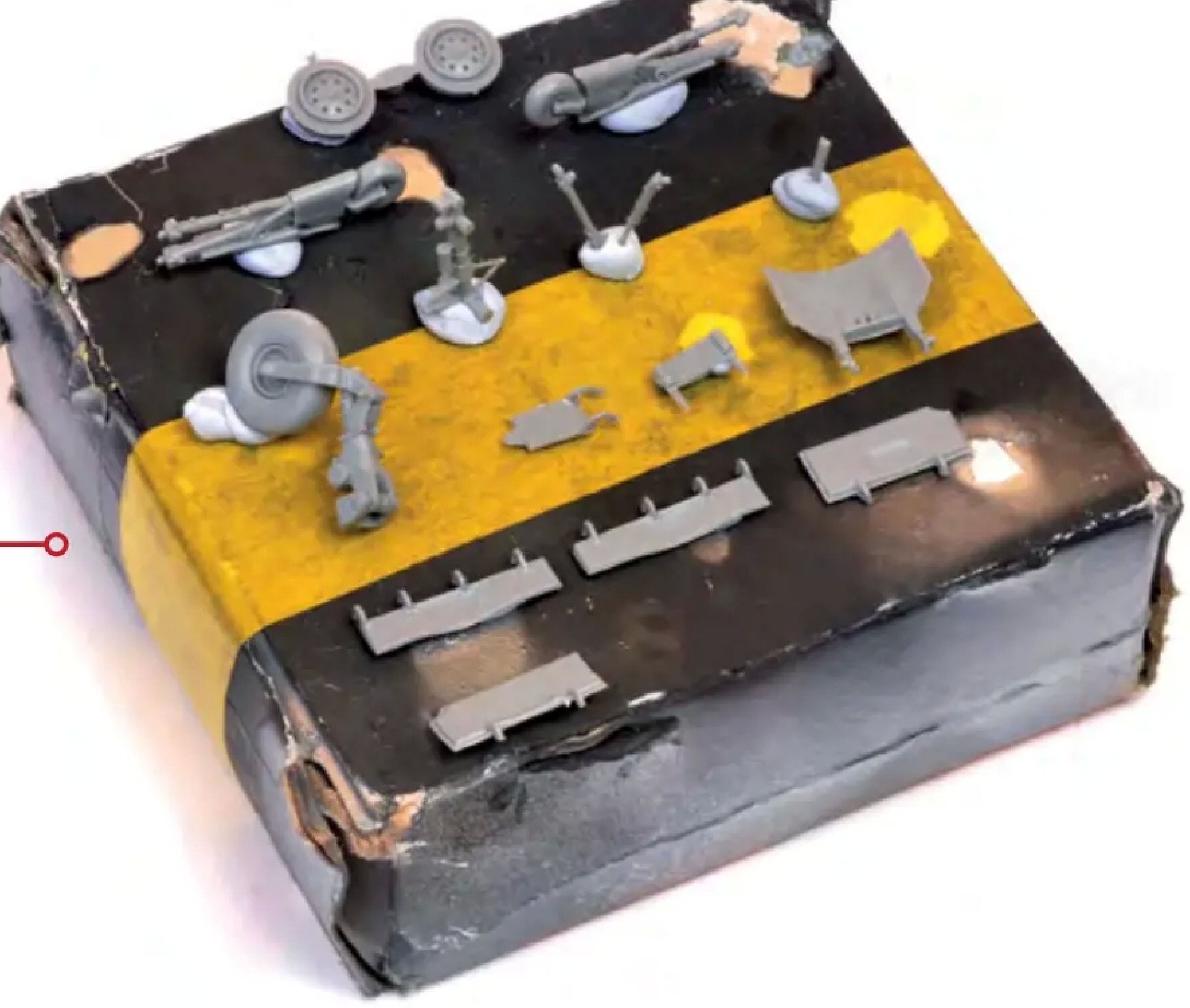


Rough handles were also cut from Milliput.

Kinetic Model Kits 1:48 Sea Harrier FA2 • Item No. K48041

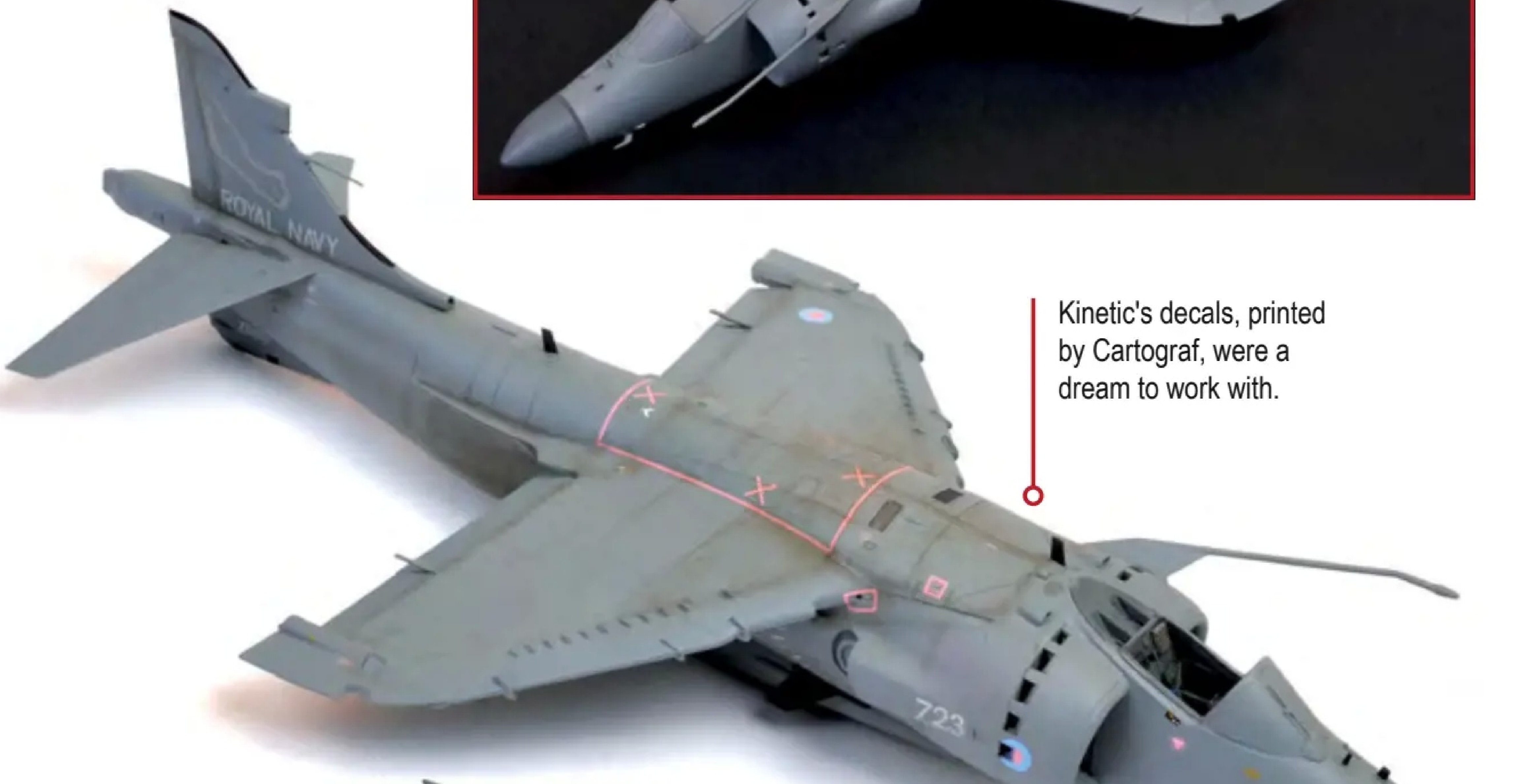


The canopy and cockpit were masked off prior to painting.



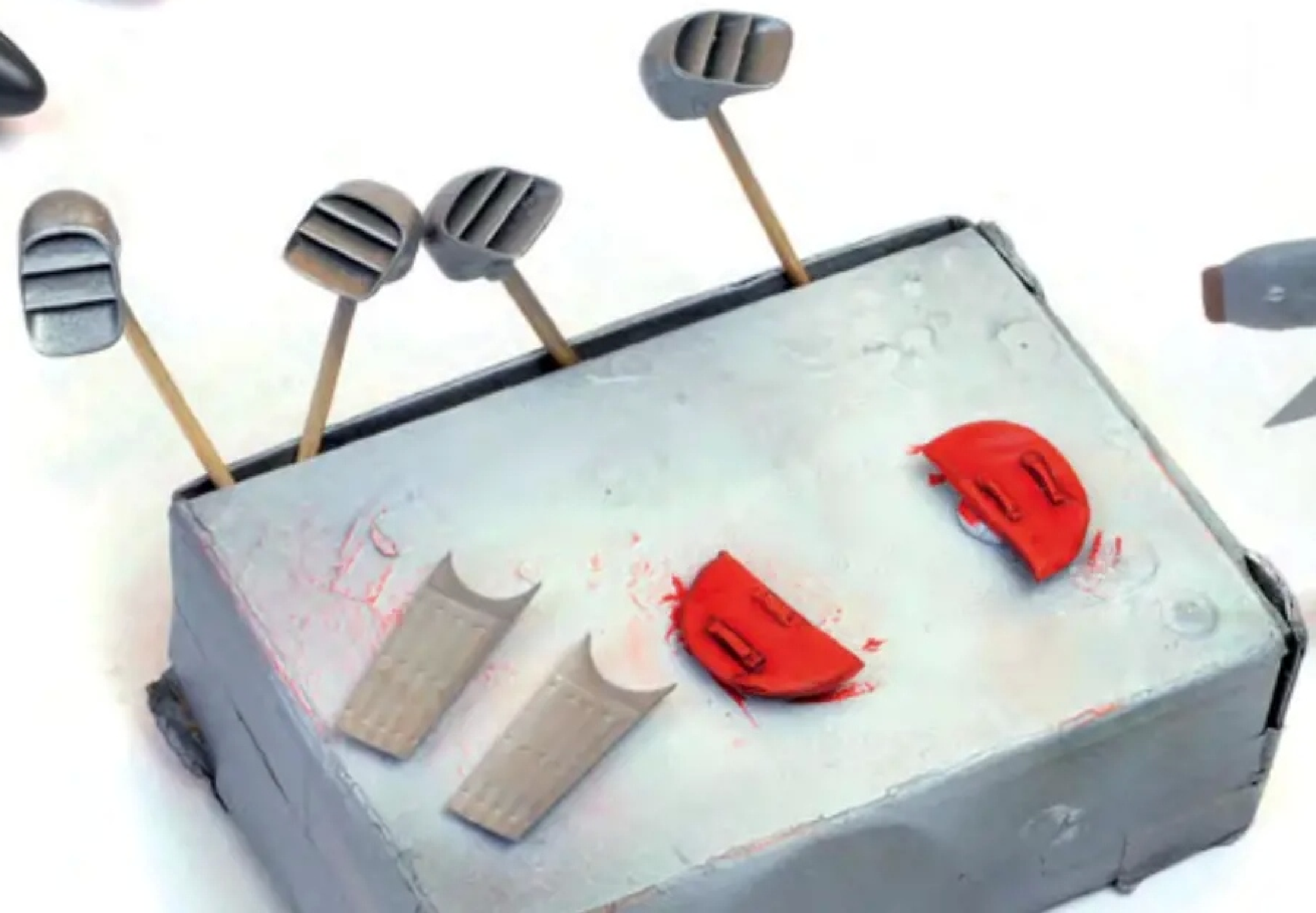
Dangly bits ready for painting.

Base colours are on.



Kinetic's decals, printed by Cartograf, were a dream to work with.

The drop tanks were painted Extra Dark Sea Grey.



Small parts were attached to a cardboard box to make handling easier while painting.

MARKINGS

Decals are designed by Crossdelta and luxuriously printed by Cartograf. The decal sheet is big and colourful, with two commemorative schemes plus 26 aircraft depicted at disbandment in 2004 and 2006.

Colour callouts are offered for Vallejo and GSI Creos (I believe this is Gunze-Sangyo acrylic) paints.

ASSEMBLY

I found that the model fitted well after the plastic parts were carefully cleaned up. Many of the parts had flash on or near the mating surfaces, so a bit of time spent with a sharp knife and a sanding stick is a good investment. The plastic is quite soft and easy to work with, so this is no great chore.

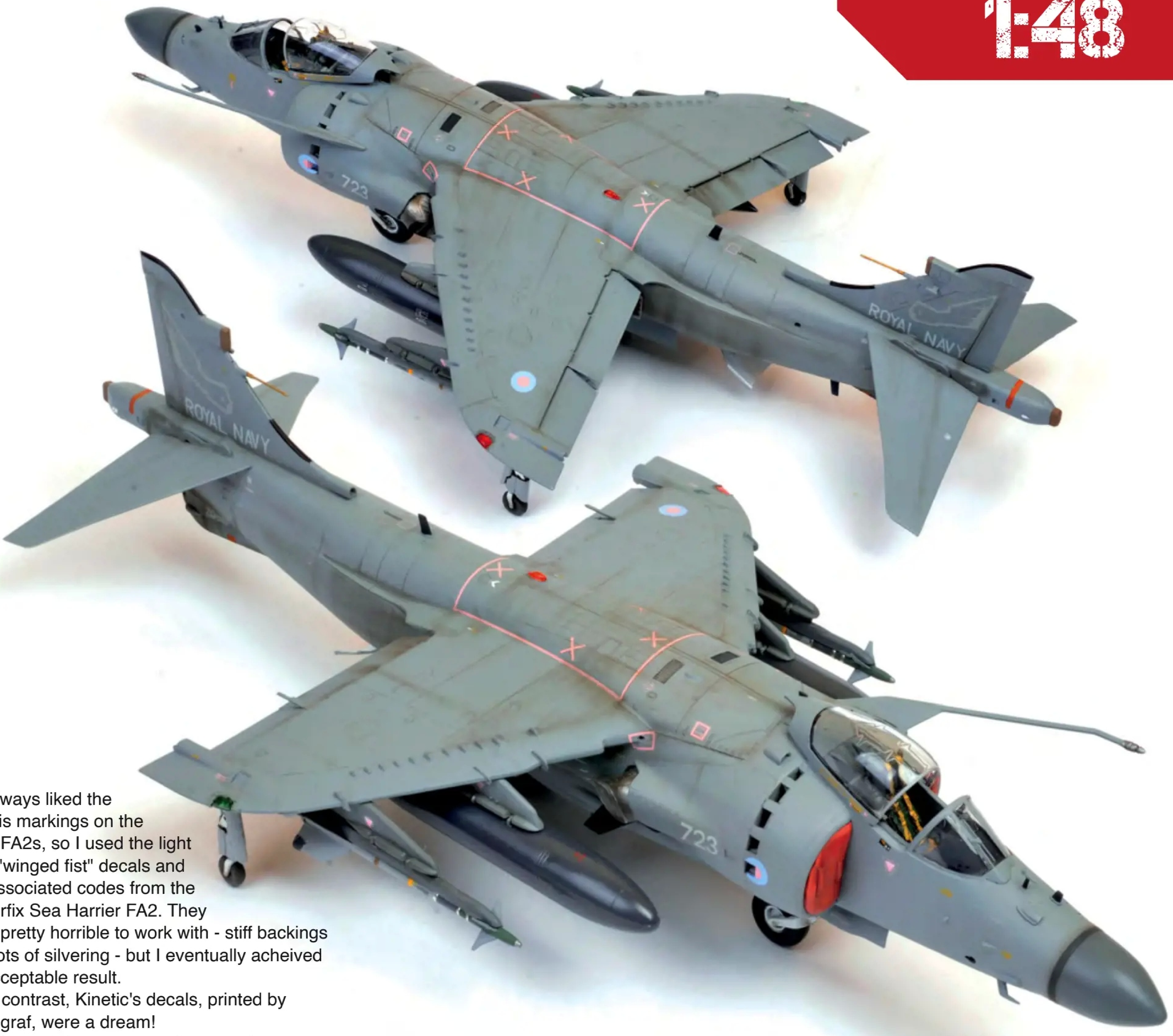
I also found that the wing saddle fitted much better when I completely cut away the front and rear locating ridges on the opening at the top of the fuselage. When I was finished the model, I was very impressed that all five wheels - two outriggers and three main wheels - touched the ground at the same time without any adjustment.

The model was mostly built straight from the box, but I did fit an Aeroclub resin ejection seat, added some detail to the bare cockpit upper sidewalls, and scratch built intake covers from Kneadatite two-part epoxy putty.

I had originally planned to do this as a quick build with a clean, simple paint job, but the more I looked at photos in Neil Mercer's excellent photographic study of early SHAR FA2s, "The Sharp End", the more immersed I became.

There is some really odd weathering happening on these aircraft, and I tried to reproduce some of what I could see with the dirty areas on the top mid fuselage and fanning out onto the wings, as well as apparent primer and sealer daubed here and there, in addition to the Extra Dark Sea Grey drop tanks.

Although it is essentially a single colour scheme, I tried to maximise the interest by varying the sheen in different areas - low sheen fuselage, slightly shinier radome and full gloss tanks. All paints were applied with my Testor Aztek A470 airbrush fitted with the fine tan-coloured tip



I always liked the low-vis markings on the early FA2s, so I used the light grey "winged fist" decals and the associated codes from the old Airfix Sea Harrier FA2. They were pretty horrible to work with - stiff backings and lots of silvering - but I eventually acheived an acceptable result.

By contrast, Kinetic's decals, printed by Cartograf, were a dream!

In the end, I spent a couple more days painting the model than I intended, but I'm glad that I did.

CONCLUSION

Kinetic's 1:48 scale SHAR is well detailed, offers many useful options and alternative position parts, and provides a wealth of ordnance. Engineering appears straightforward and it is a fast build.

I thoroughly recommend this kit. ■

Thanks to Lucky Model for the sample
www.luckymodel.com

723
ROYAL NAVY

ROYAL NAVY
723
ZD615

Airfix 1:48 Westland Sea King HAS.1:HAS.5/HU.5 • Kit No. A11006

SEA KING RULES THE WAVES

Steve Pritchard adds detail to the lovely Airfix 1:48 scale Westland Sea King

CU
DANGER
ROYAL NAVY
RESCUE
23
66

Black Dog's Westland Sea King engine set.

I used a selection of aftermarket upgrades from Edouard, including resin brass in replacement wheels and Edouard's time-saving masks.

SPECIFICATION:

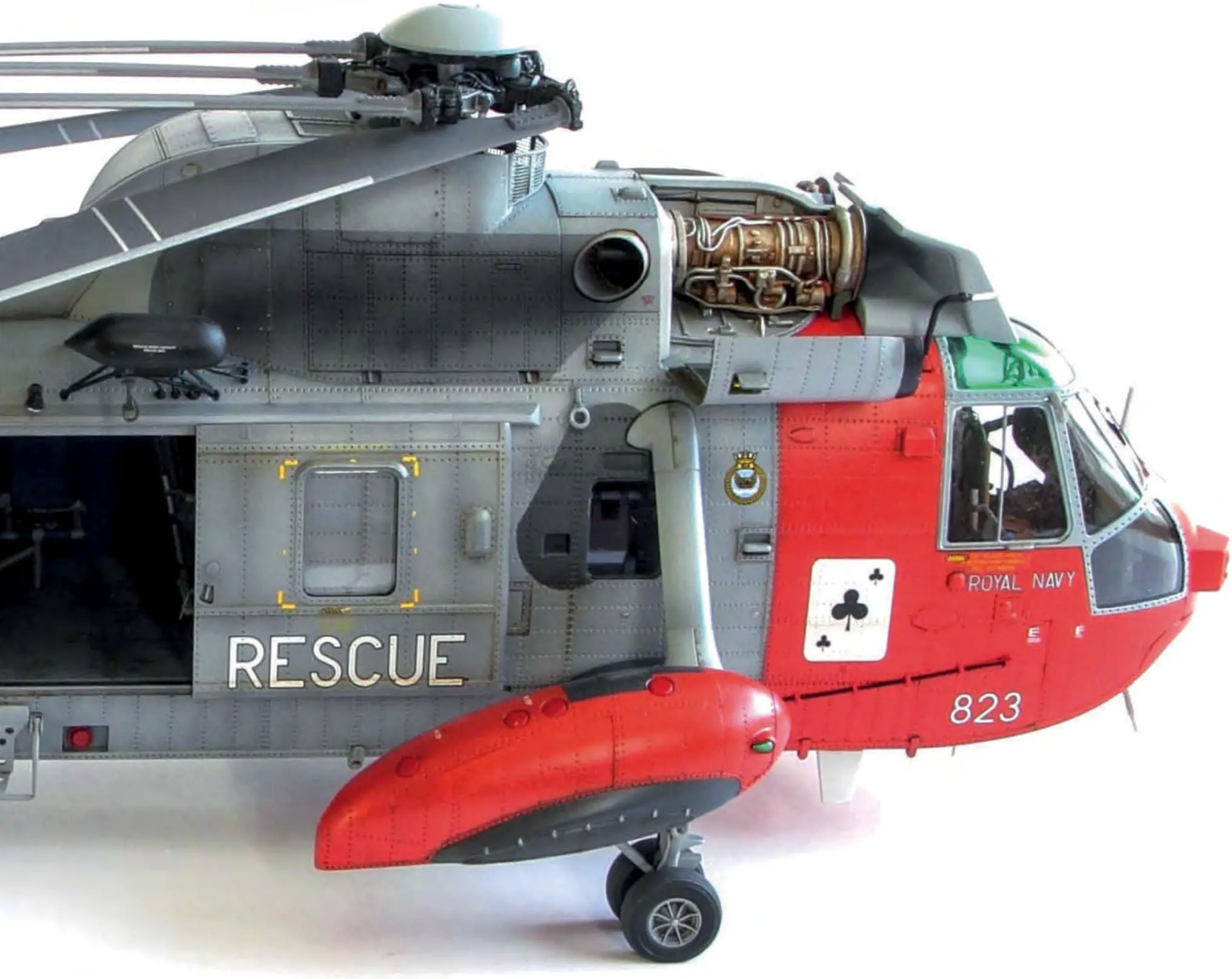
Airfix 1:48 Westland Sea King HAS.1:HAS.5/HU.5
Kit No. A11006

AFTERMARKET ACCESSORIES:

- Eduard Mask for 1:48 Airfix Sea King (EX989)
- Eduard Brassin Sea King wheels (648930)
- Eduard Sea King seatbelts (FE1397)
- Eduard Sea King HU.5 cargo interior (491406)
- Eduard Sea King HU.5 (491396)
- Eduard Sea King HU.5 cargo seatbelts (491397)
- Blackdog Westland Sea King Engines for 1:48 Airfix (A48200)

PAINTS USED:

- SMS Premium Acrylic Lacquer Medium Sea Grey PL108
- SMS Premium Acrylic Lacquer Signal Red PL29
- SMS Premium Acrylic Lacquer Barley Grey PL54
- SMS Premium Acrylic Lacquer Trainer Yellow PL162
- Detail painting with various Tamiya Acrylics (XF) and Lacquers (LP), and Mr. Color Lacquers – brushed straight from the bottle or airbrushed with Mr. Color Leveling Thinner.



FEATURE ARTICLE

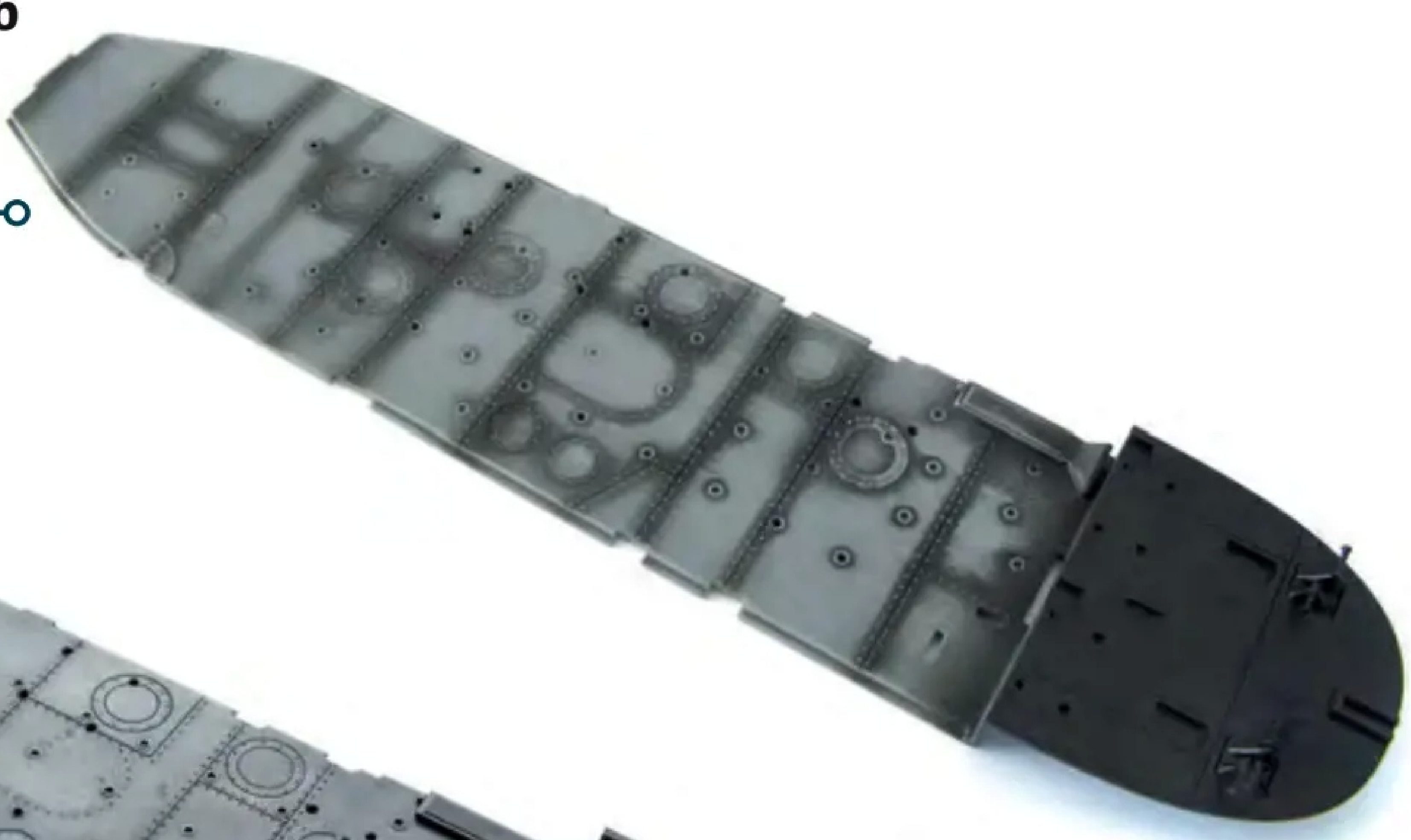
Airfix 1:48 Westland Sea King HAS.1:HAS.5/HU.5 • Kit No. A11006

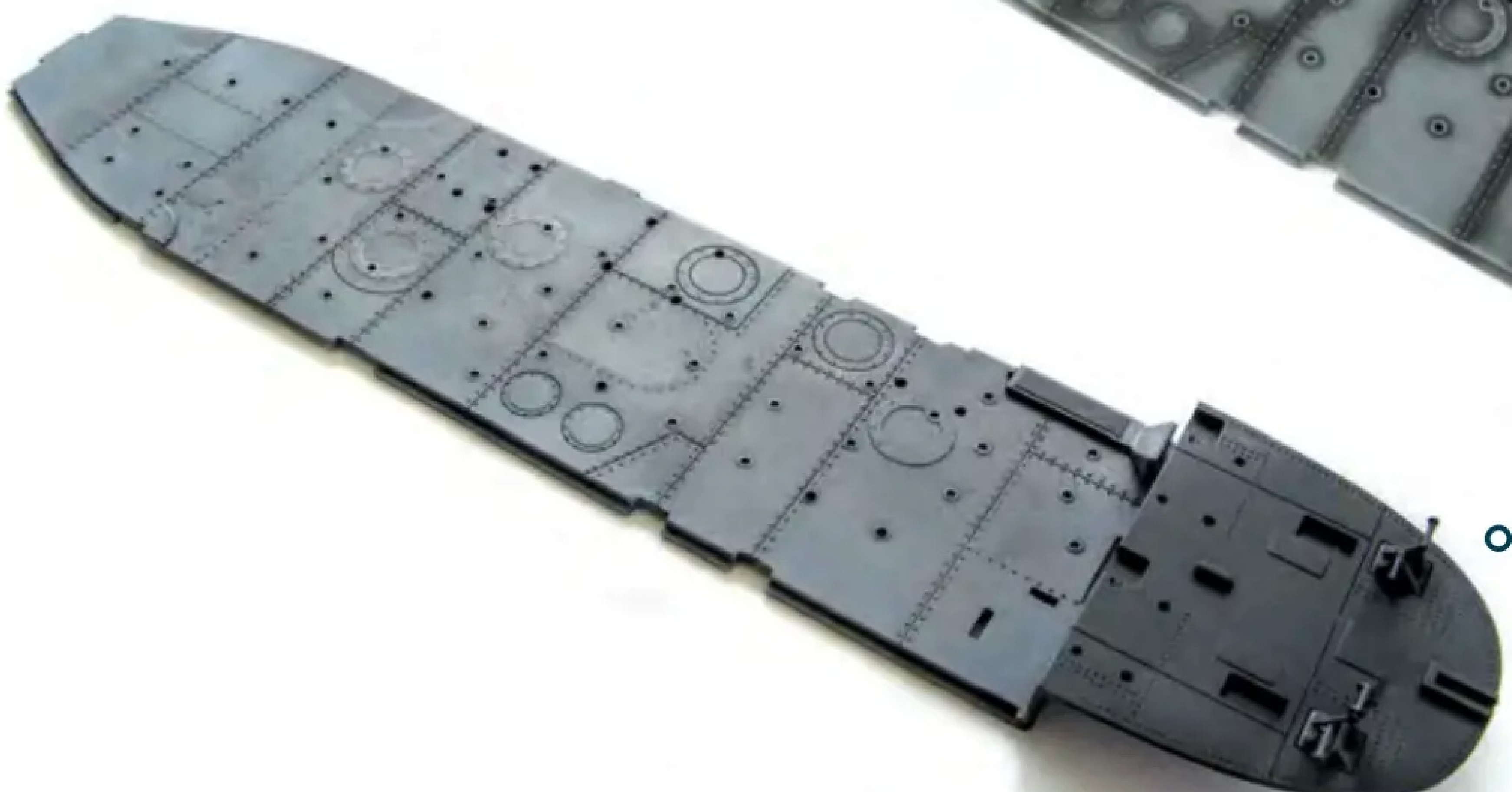
Opening the box reveals a lot of very well detailed parts. The difficult question is, what version should I make – there are three Sea King versions supplied and four different markings option. I decide to make version C, with colourful markings from No.771 Naval Air Squadron, Culdrose in 1995, and I was keen to try the SMS paints, which are available from my local hobby shop.

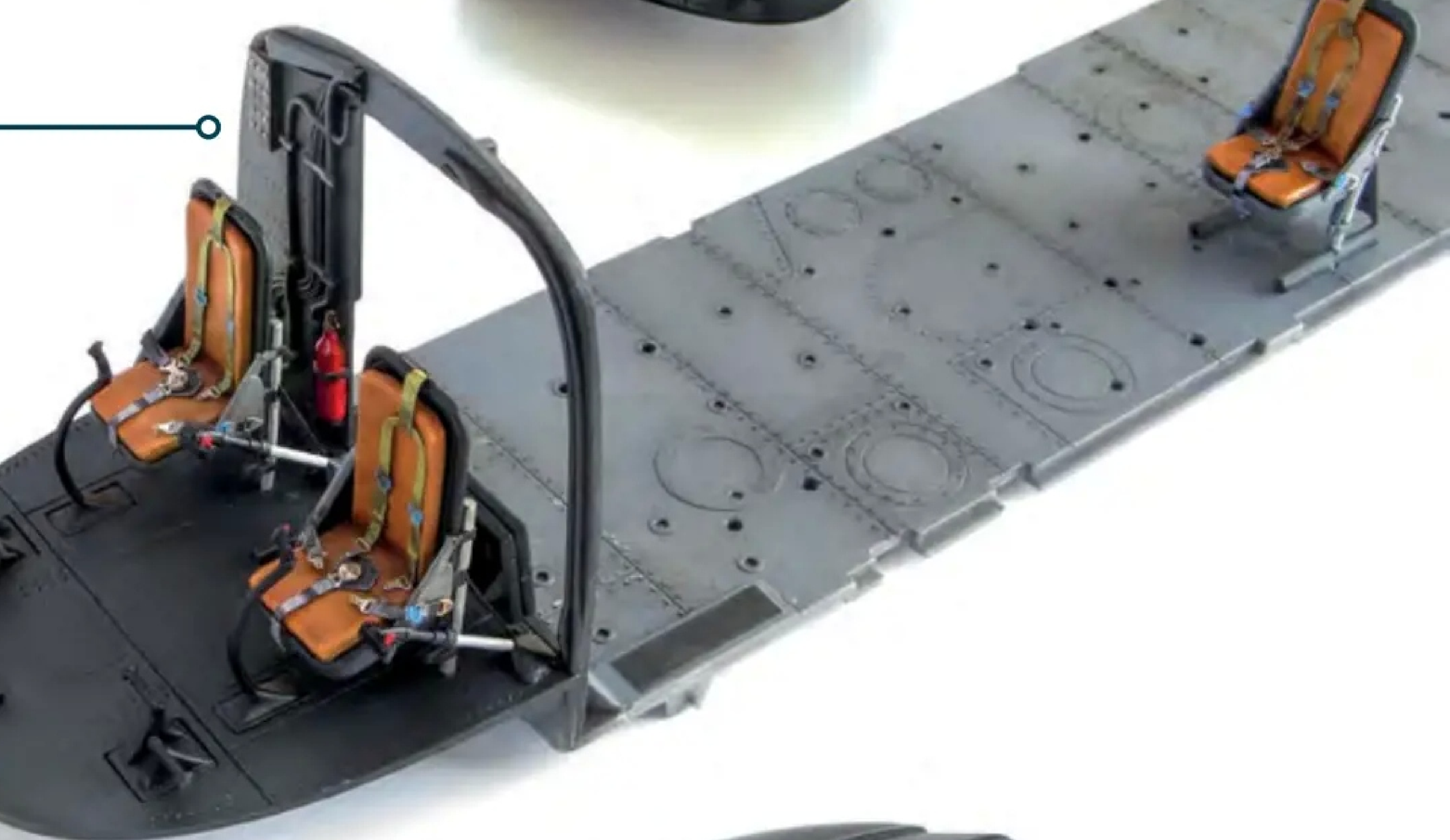
CONSTRUCTION

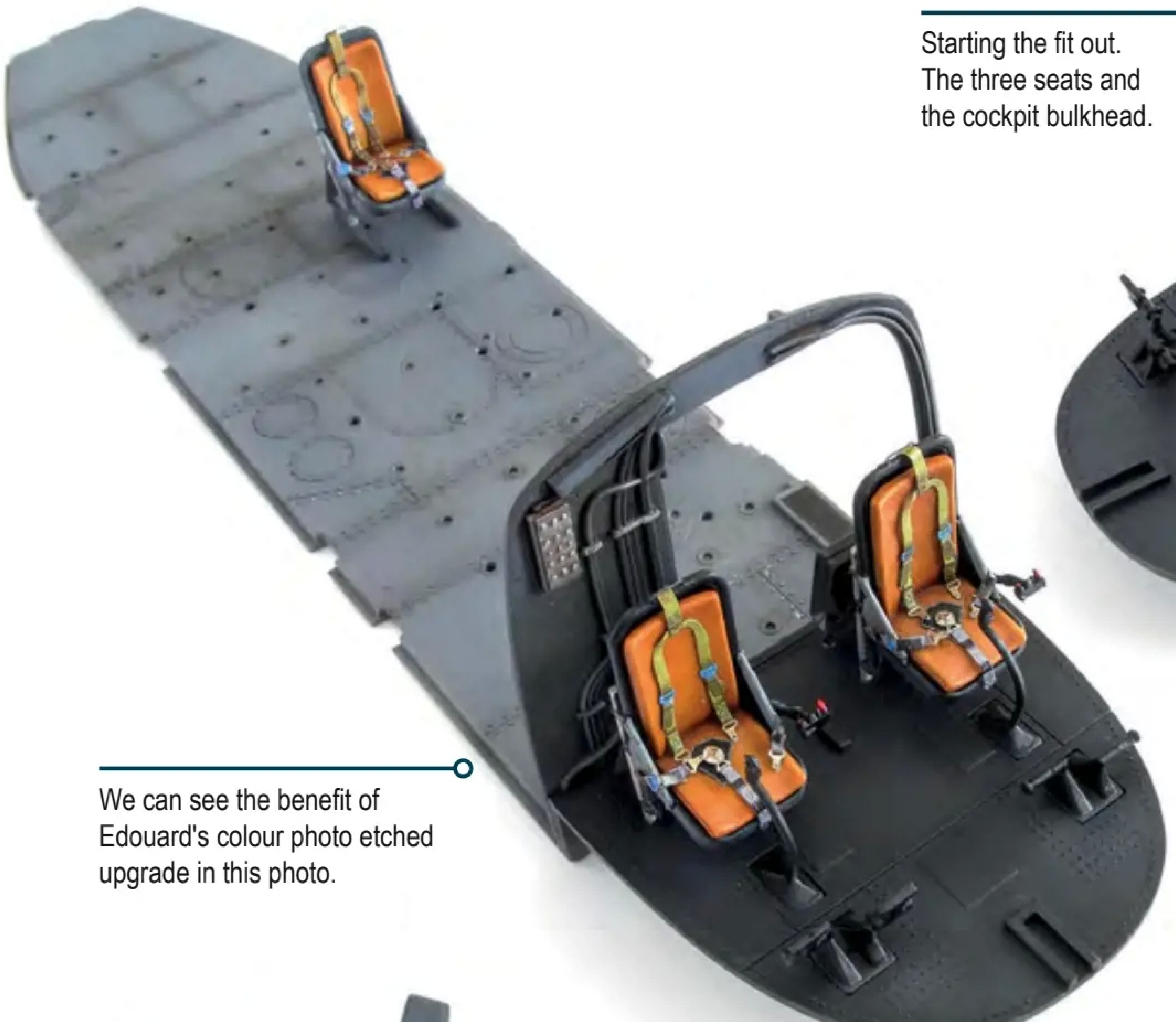
I marked up the instruction sheet with a marker pen so I can easily identify the steps that are applicable to version C – there is a lot of options with choice of interior fitout and colours.

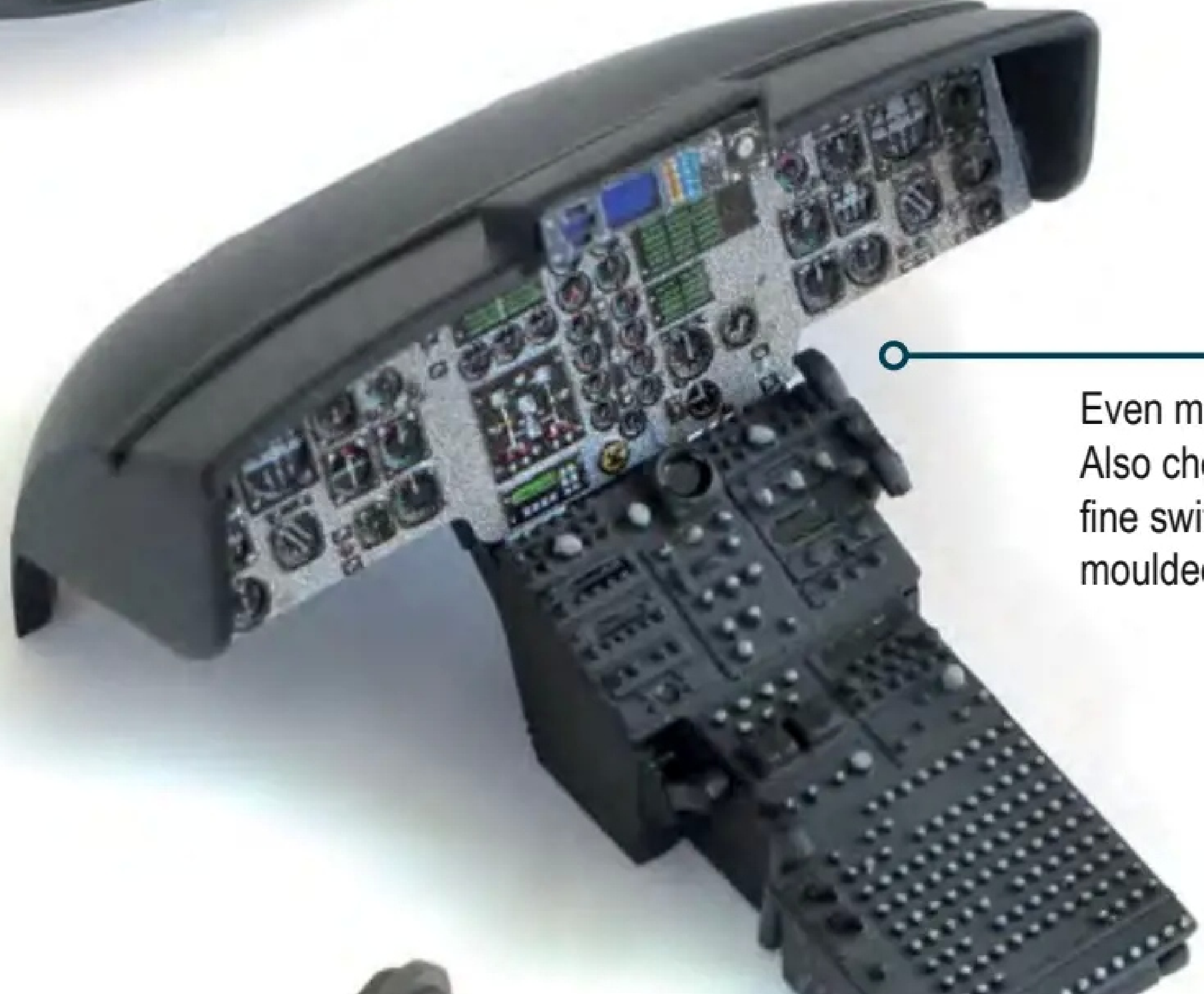
The sub-assemblies, seats, cockpit and interior equipment were painted first, which addition details from Eduard. The seatbelts really made a difference to the appearance of the seats – I glued the belts with Micro Kristal Klear, which is easy to remove any excess glue.

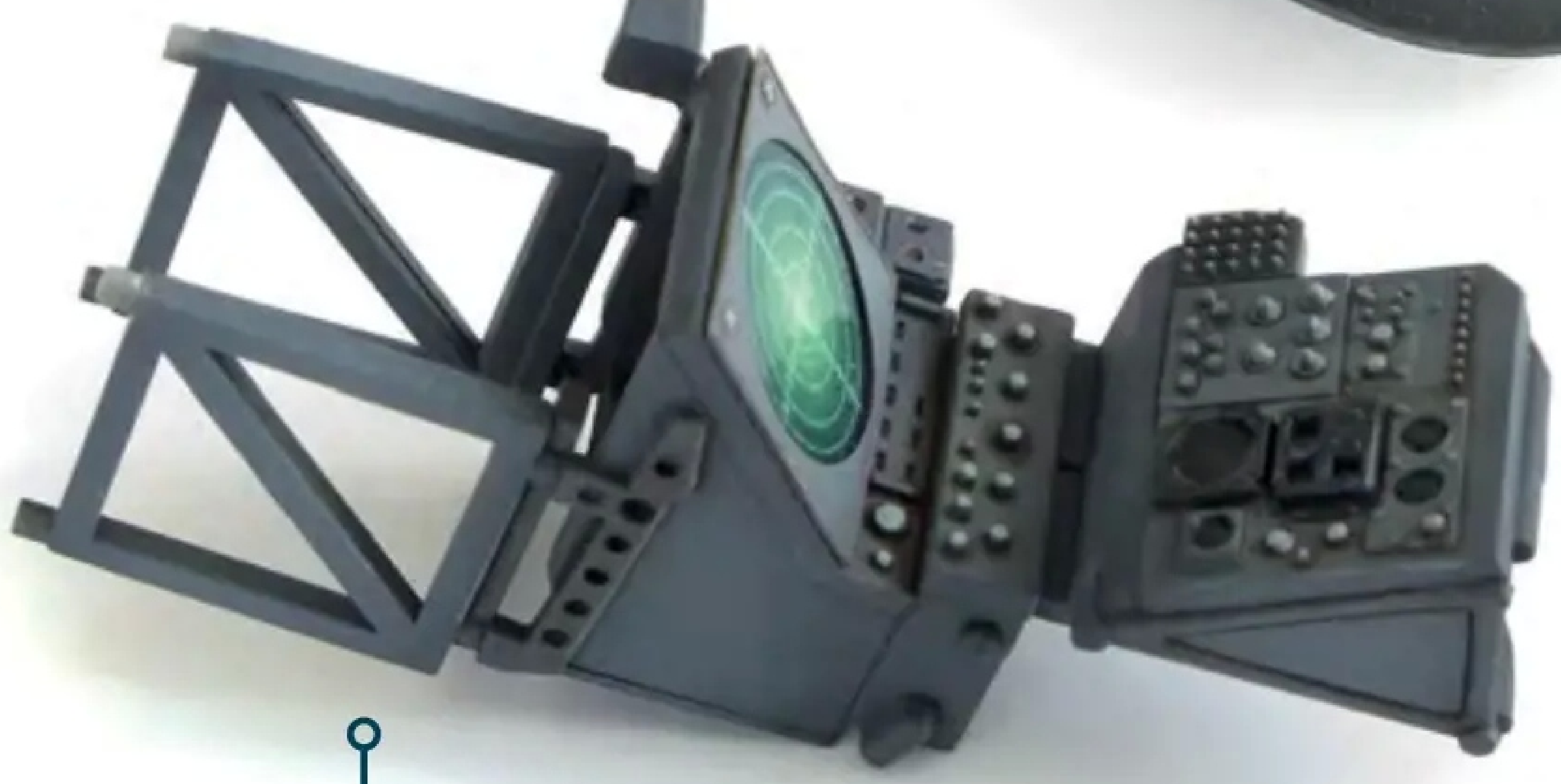

The cabin floor pre-shaded.

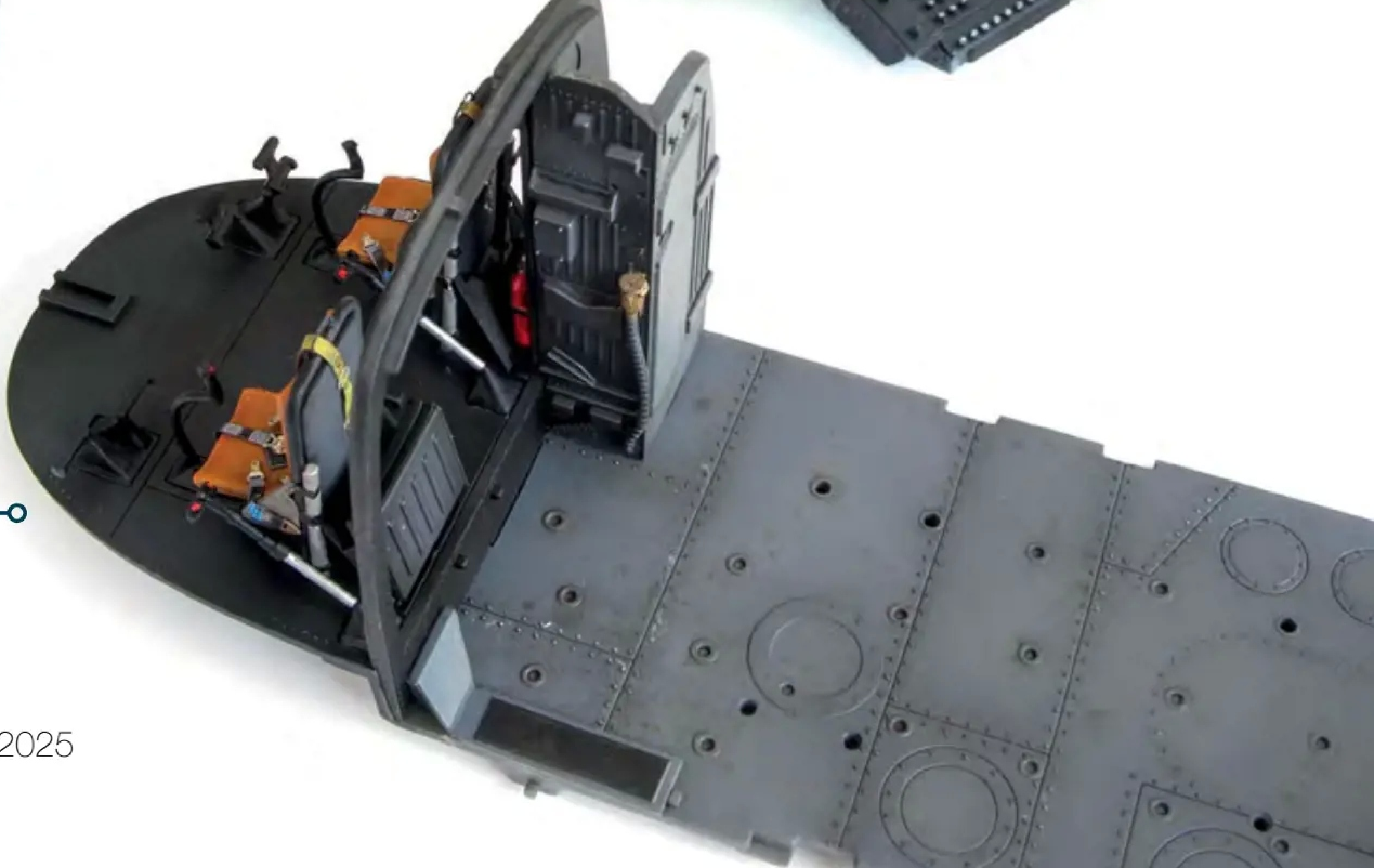

Washes and weathering added.


Starting the fit out. The three seats and the cockpit bulkhead.


We can see the benefit of Edouard's colour photo etched upgrade in this photo.


Even more so here. Also check out the fine switch detail moulded by Airfix.


The radar operator's station is also beautifully detailed.


More structural features are being added to the cabin.

Steps 68, 69 and 70 shows the large 'shell' enclosing the cargo interior – it fits beautifully. Again, in steps 81,82 and 83 it is fitted into the fuselage halves without any issues. Step 88 shows the large one piece fuselage hull and again it is a great fit. I use Tamiya Extra Thin Cement to attach, applied in small sections.

I replaced the moulded vents in the tail and near the rotor head with Eduard parts. I also added the vents to the Blackdog engine covers.

Additional detailing was added to the rotor head, the fuselage including the cable near the starboard nose and the rope on the port side which is connected to the sea anchor. The main undercarriage was detailed with hydraulic lines with lead wire and the winch also had electrical connections with lead wire.

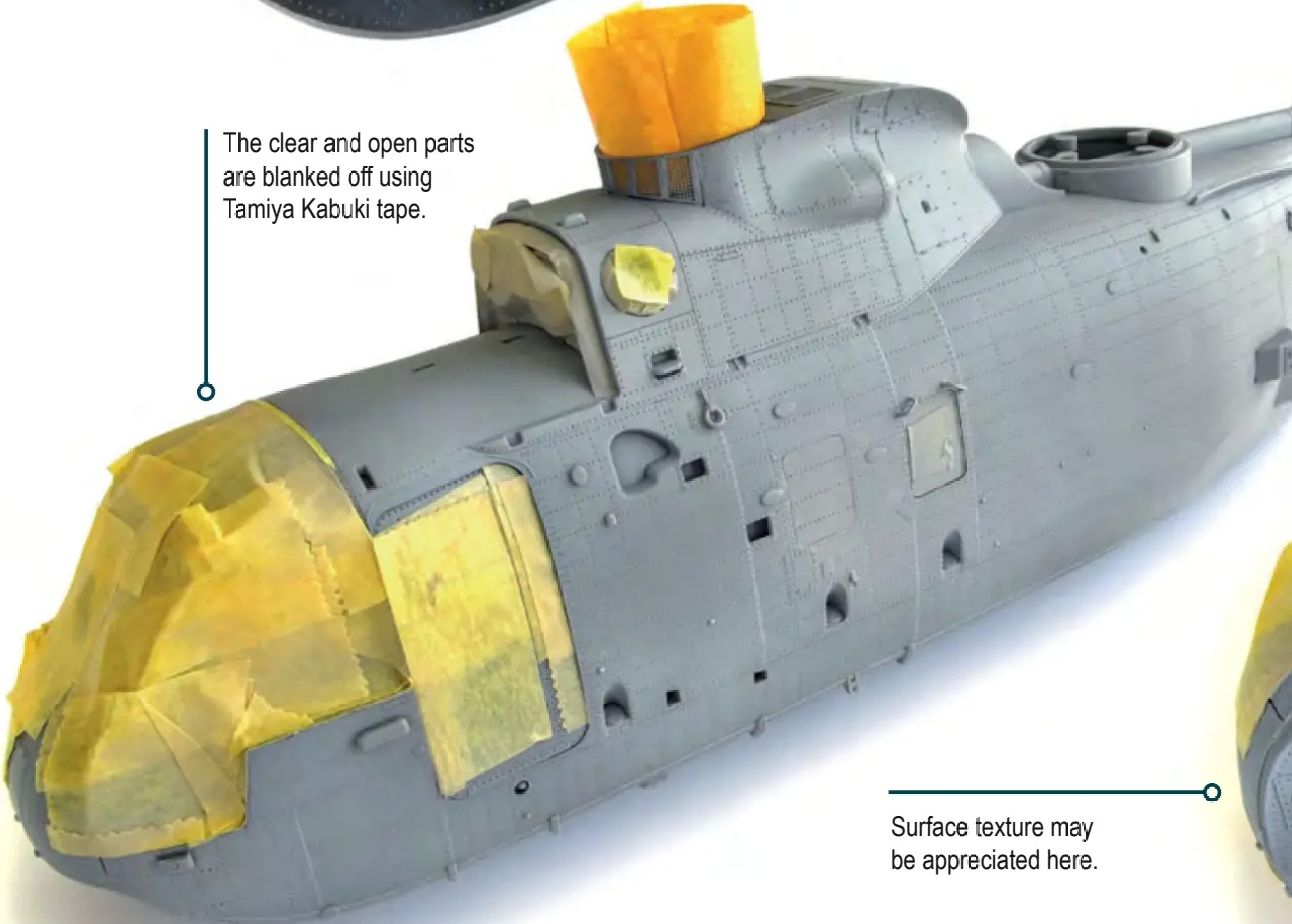
The rest of the construction was straightforward – the sponsons were painted before they were added to the fuselage, as was the tail. I did manage to break one of the tail rotor blades – I had to pin the blade to reinforce the join. I also decided to paint the main transparencies before attached to the cockpit – the fit is very good.

I added a bit of wiring to the Blackdog engines with lead wire, and some small disks of plastic representing various connectors. ▶

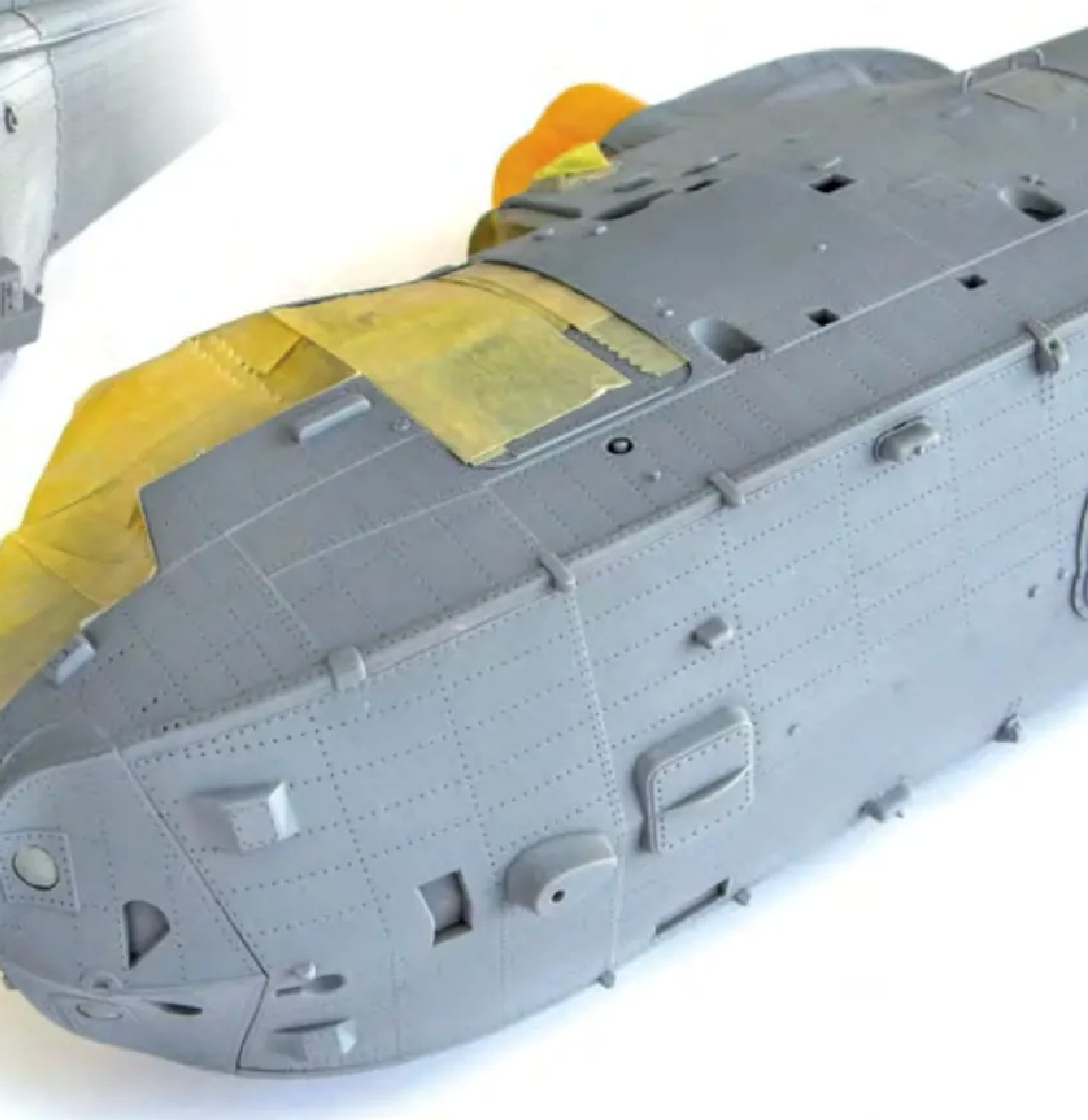
The fabric drape and texture looks really impressive.

It's starting to take shape now.

The cabin is glued to the front bulkhead and the cabin floor.



The clear and open parts are blanked off using Tamiya Kabuki tape.



Surface texture may be appreciated here.

PAINTING AND MARKINGS

The cargo floor was pre-shaded with Tamiya LP-5 Semi-Gloss Black, with Mr. Color C305 Gray as a topcoat.

Cockpit floor is LP-5, with highlights with Tamiya XF-63 German Grey.

Cargo equipment, aft bulkhead and ceiling in XF-53 Neutral Grey with XF-54 Dark Sea Grey highlights.

Orange crew seats are a mix of LP-18 Dull Red and XF-3 Yellow, cargo seats and cabin interior in XF-8 Blue .

I masked the panel just aft of the exhaust using XF-19 Sky Grey -I think it looked better than the supplied decal. Also, the panels just aft of the struts is in XF-63.

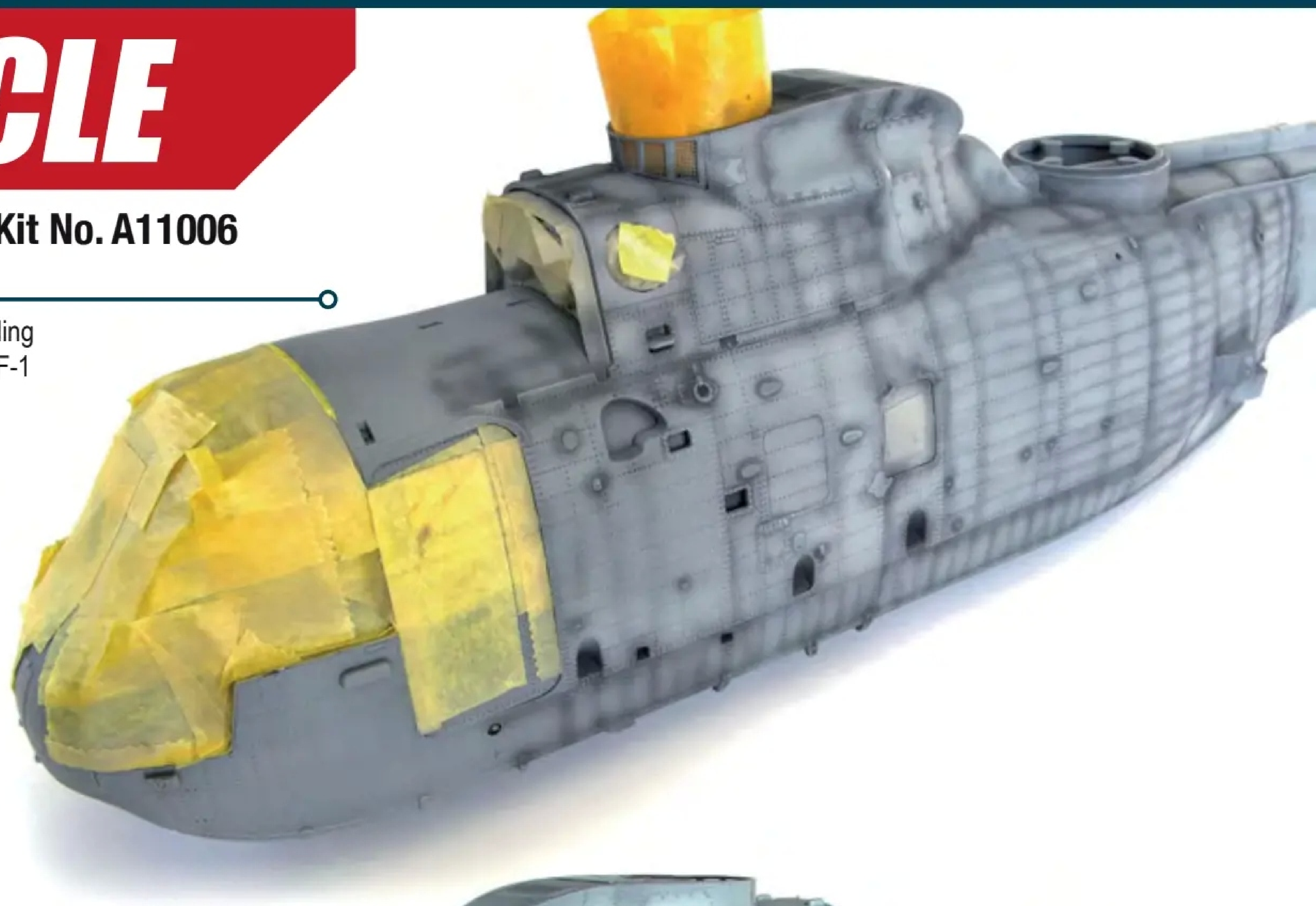
Engines and exhaust - LP-38 Aluminium with a wash of Burnt Sienna oil paint.

Main rotor blades are SMS Medium Sea Grey, SMS Trainer Yellow and Mr. Color C331 Dark Sea Gray.

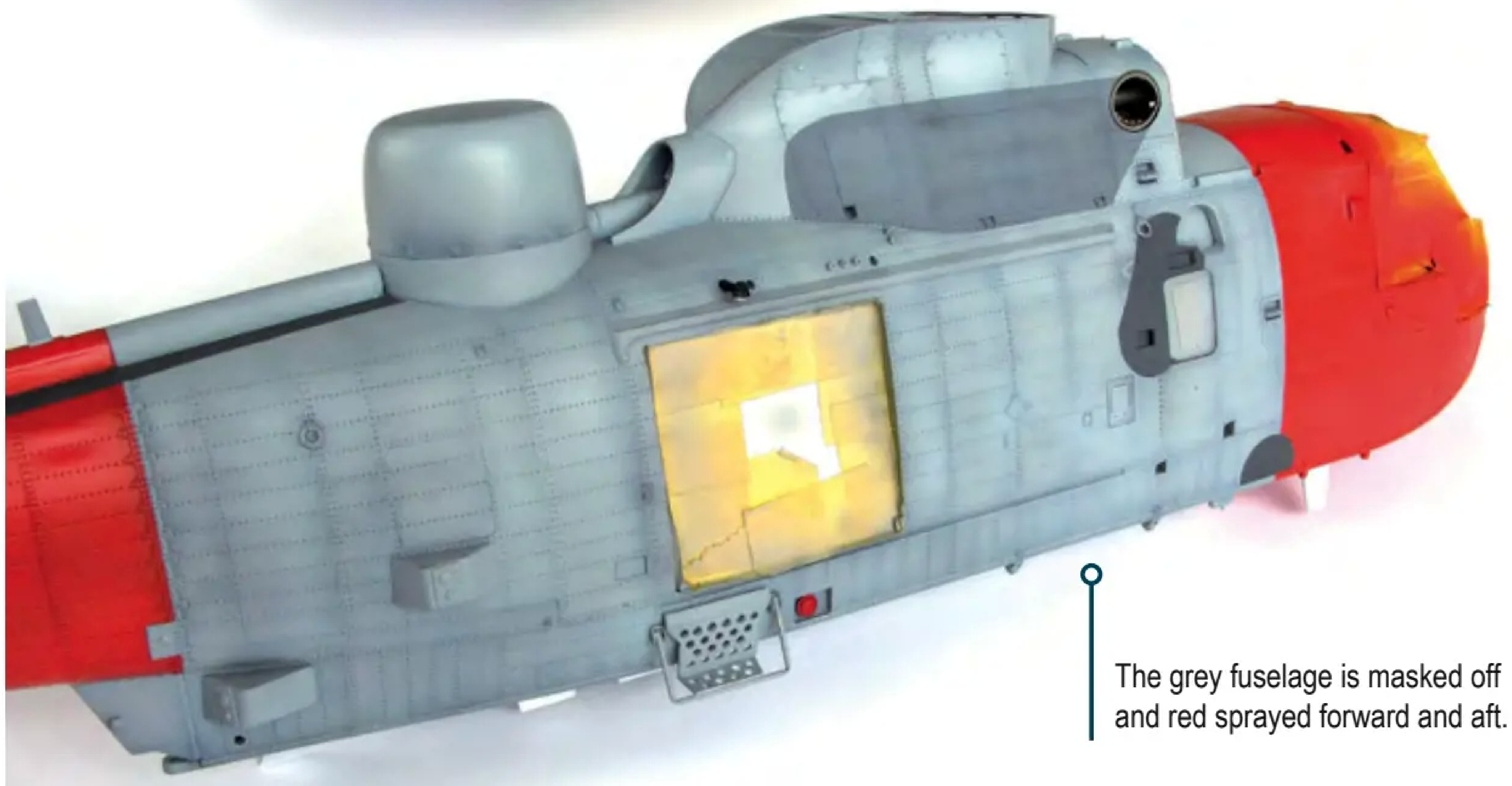
The fuselage panel lines and rivets were pre-shaded with XF-63, then I airbrushed SMS Medium Sea Grey on the sides and top. The paint is quite thin, but a couple of coats is enough to leave a suggestion of pre-shading. The bottom of the fuselage is painted with the Barley Grey. Tamiya Masking Tape was applied, then the Signal Red. I used oil paints, thinned with mineral turpentine, to highlight the panel lines and raised details. I didn't highlight the rivets with a wash – they are quite obvious without it. I used Tamiya LP-9 Gloss Clear before apply the decals. As usual, the Airfix decals are excellent – thin, solid colour and can be repositioned on the model. Micro Set and Sol helped the decals to conform with the rivets.

A very thin mix of XF-64 Red Brown and XF-69 NATO Black was applied over the exhaust panels and the top of the fuselage, then XF-1 Flat Black to represent the sooty appearance of the exhaust.

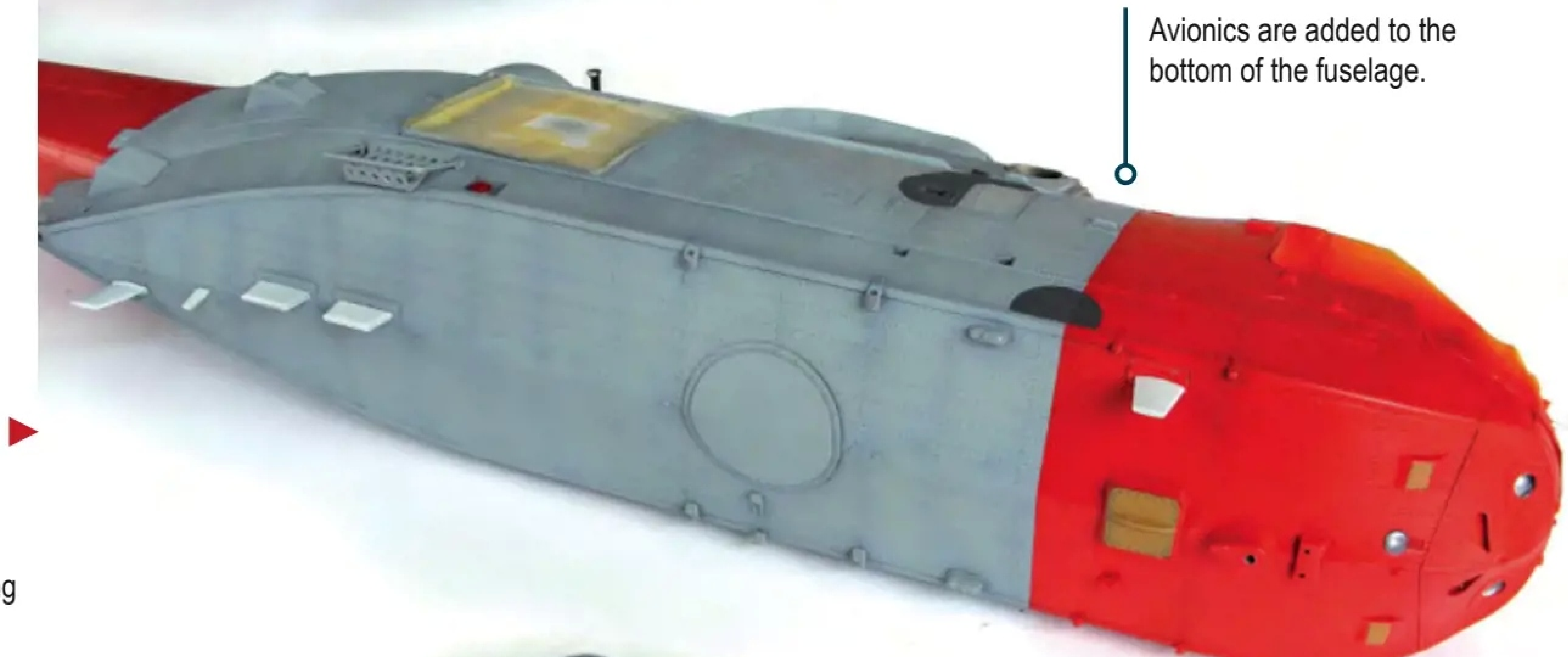
Final coat is Tamiya LP-24 Semi-Gloss Clear.



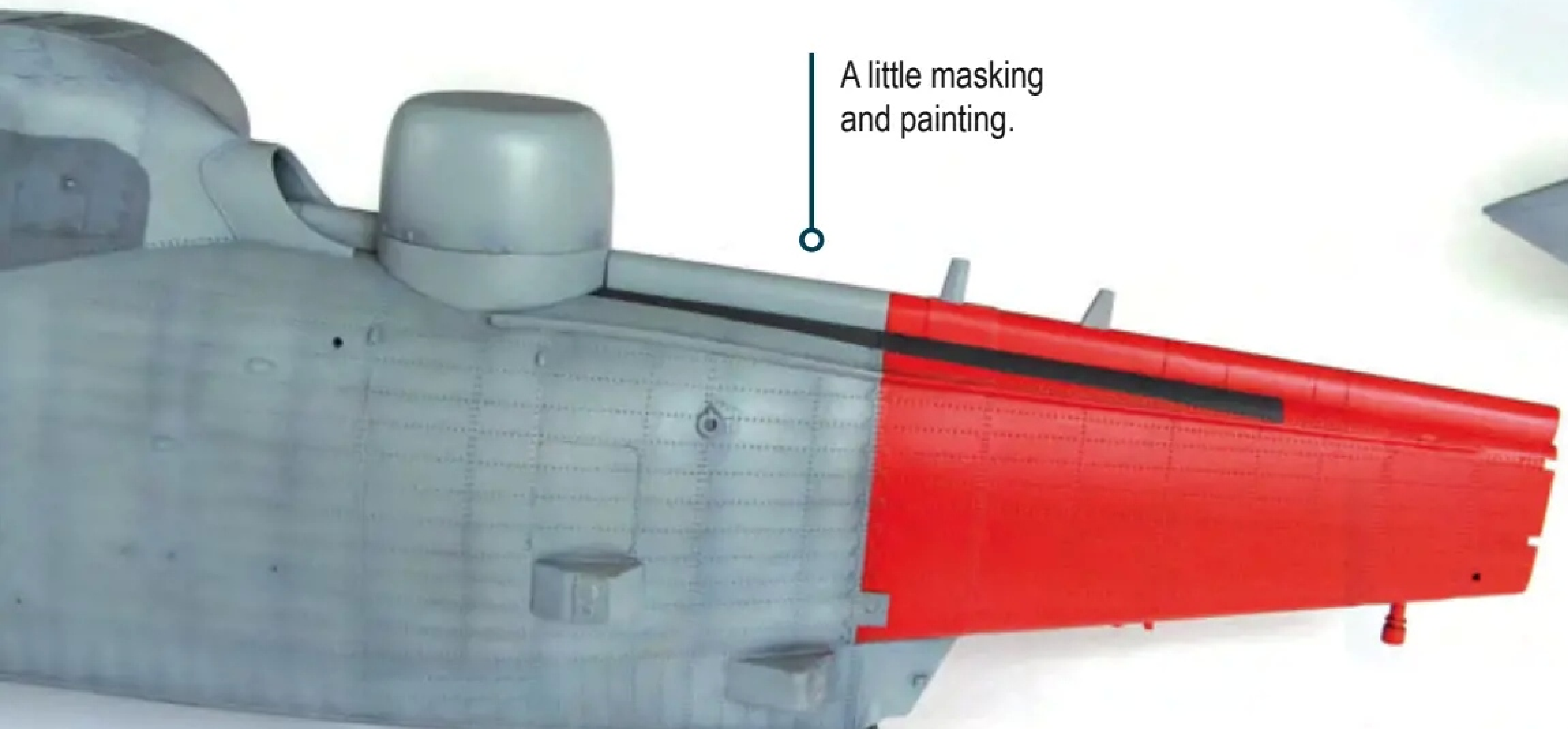
Subtle pre-shading using Tamiya XF-1 Flat Black.



The grey fuselage is masked off and red sprayed forward and aft.

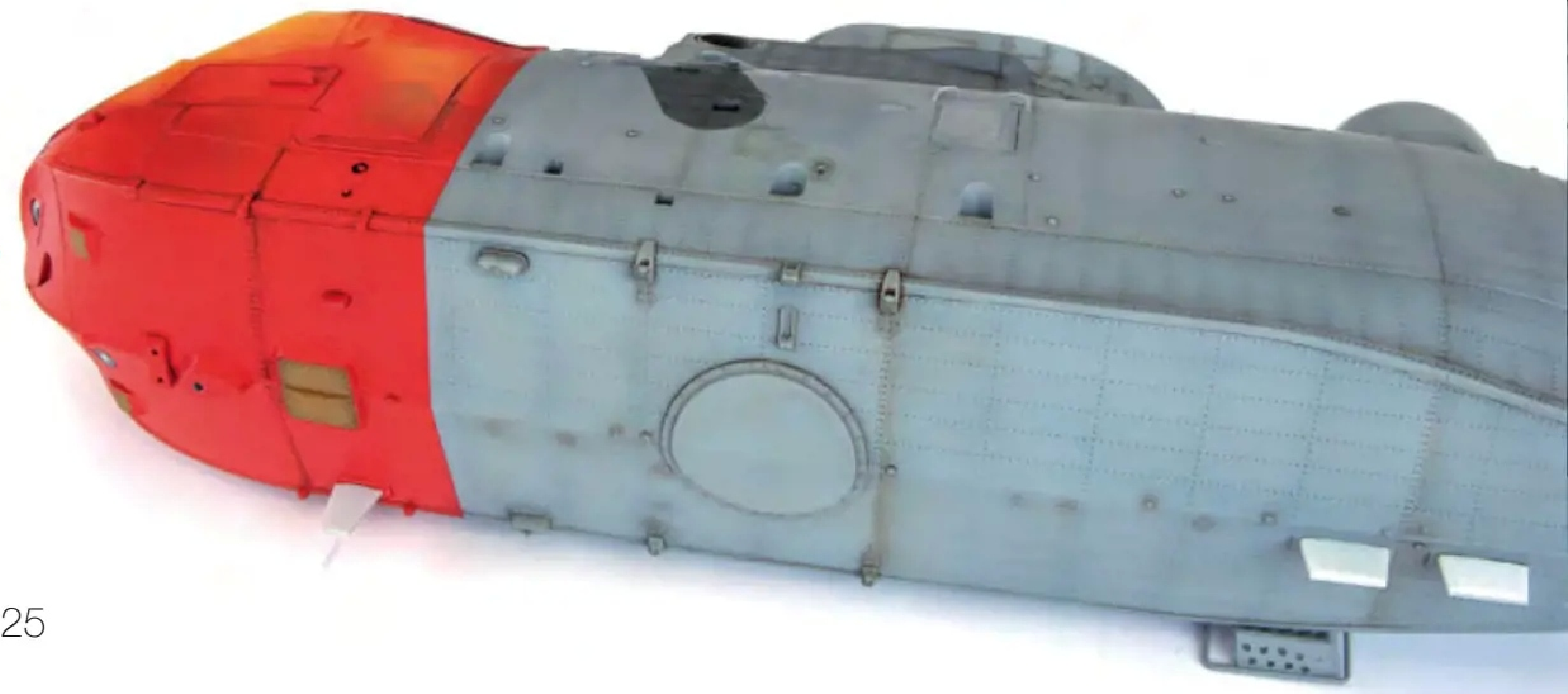


Avionics are added to the bottom of the fuselage.

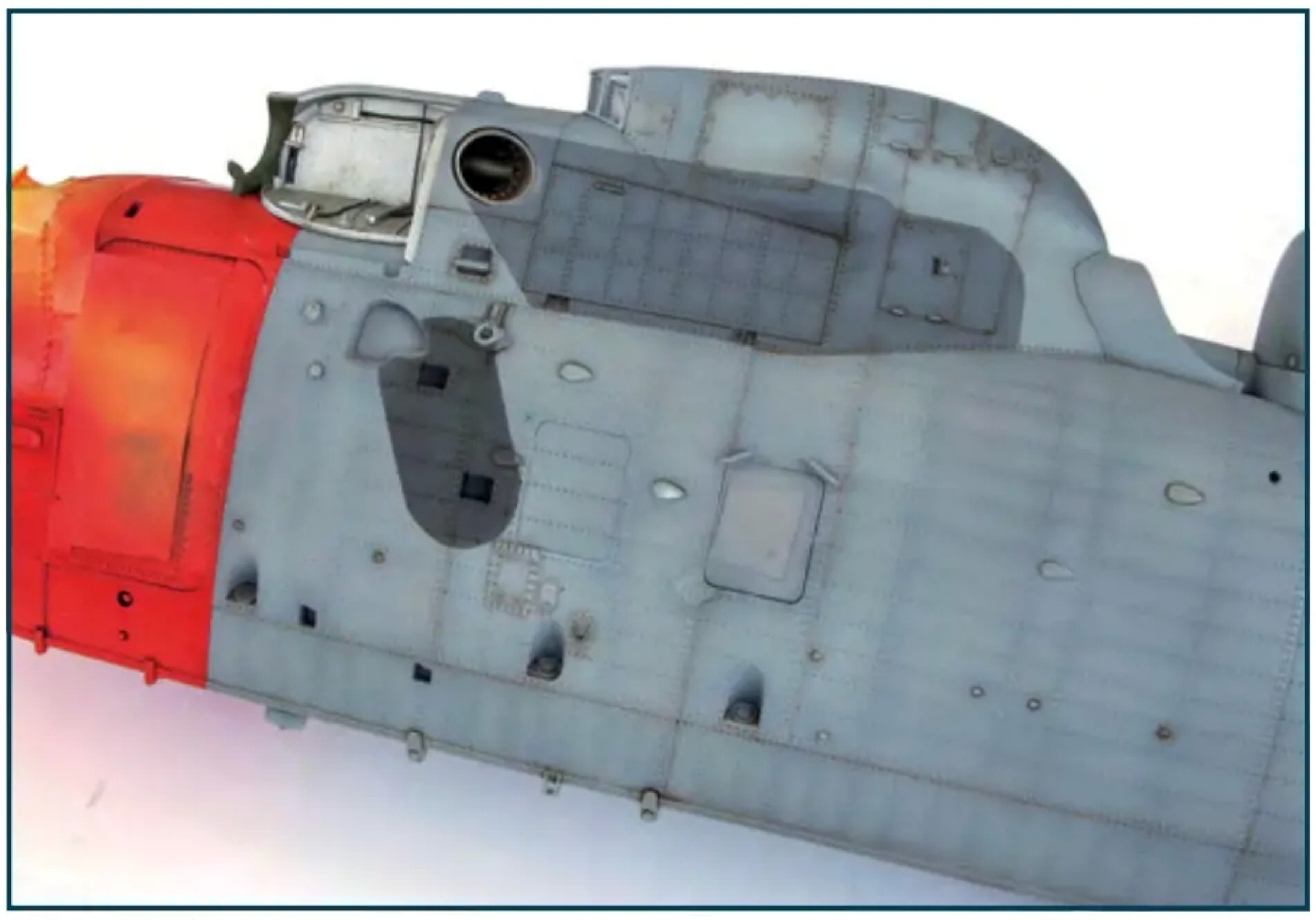


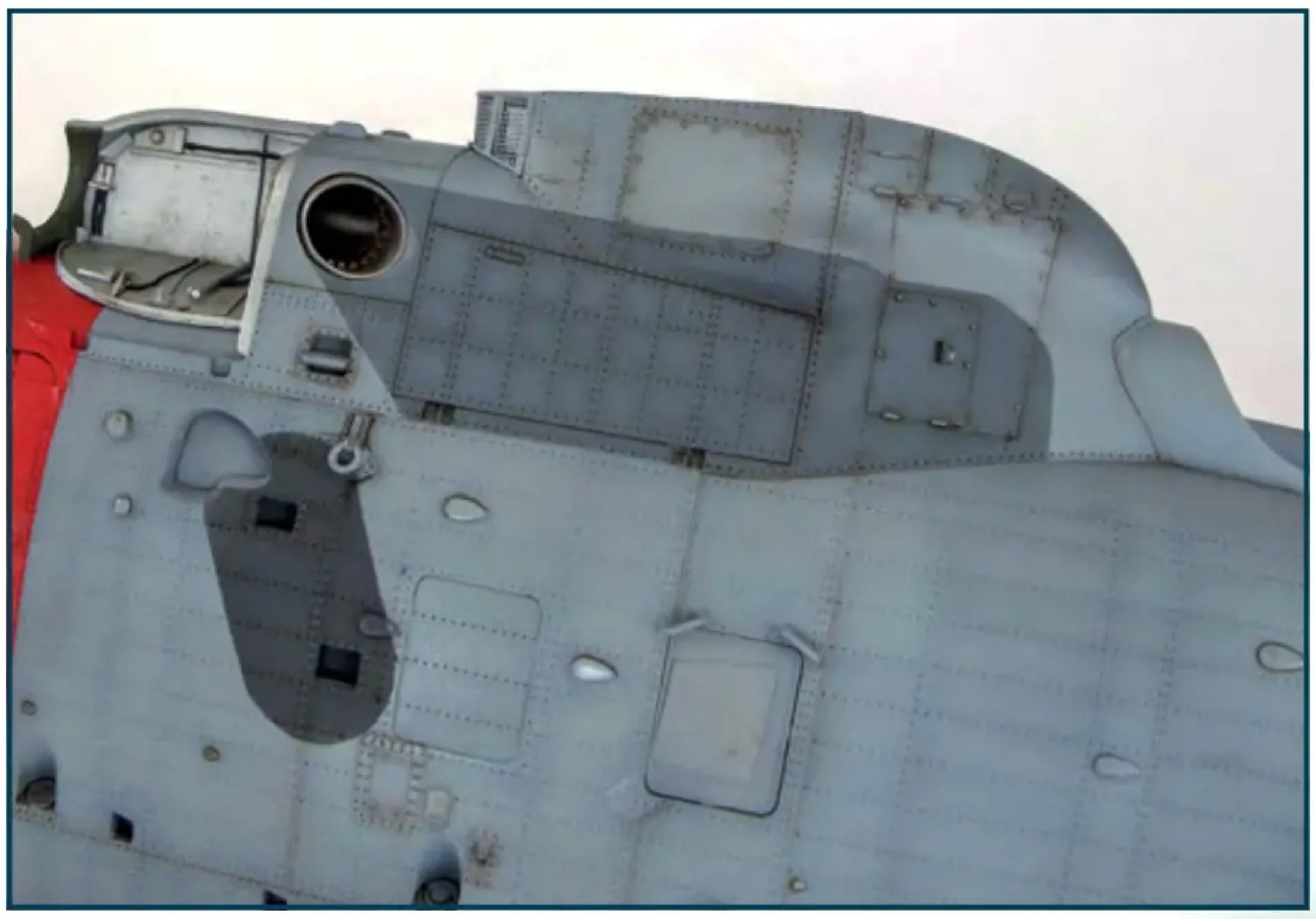
A little masking and painting.

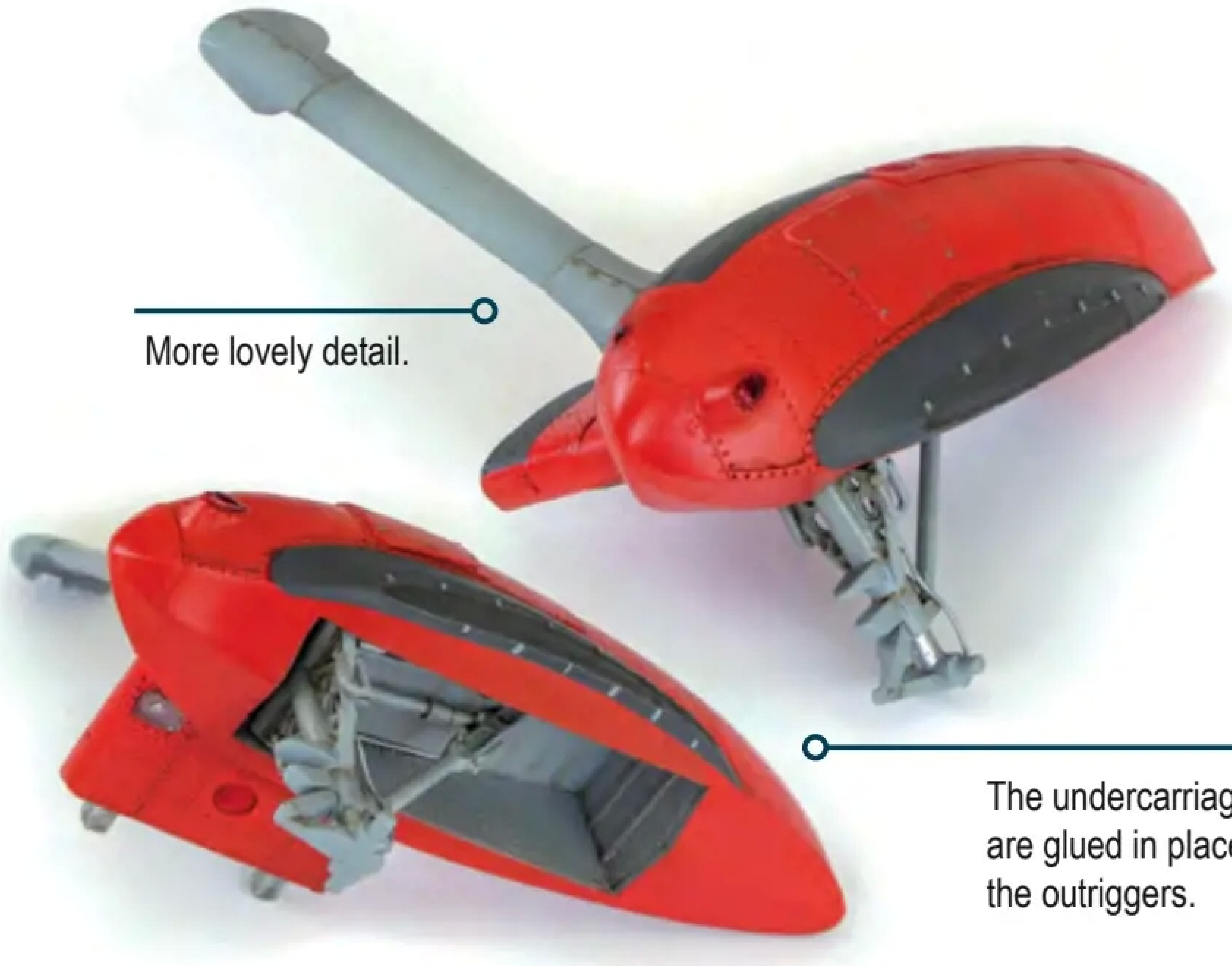
Small details such as the fine mesh on the tail are really worthwhile.



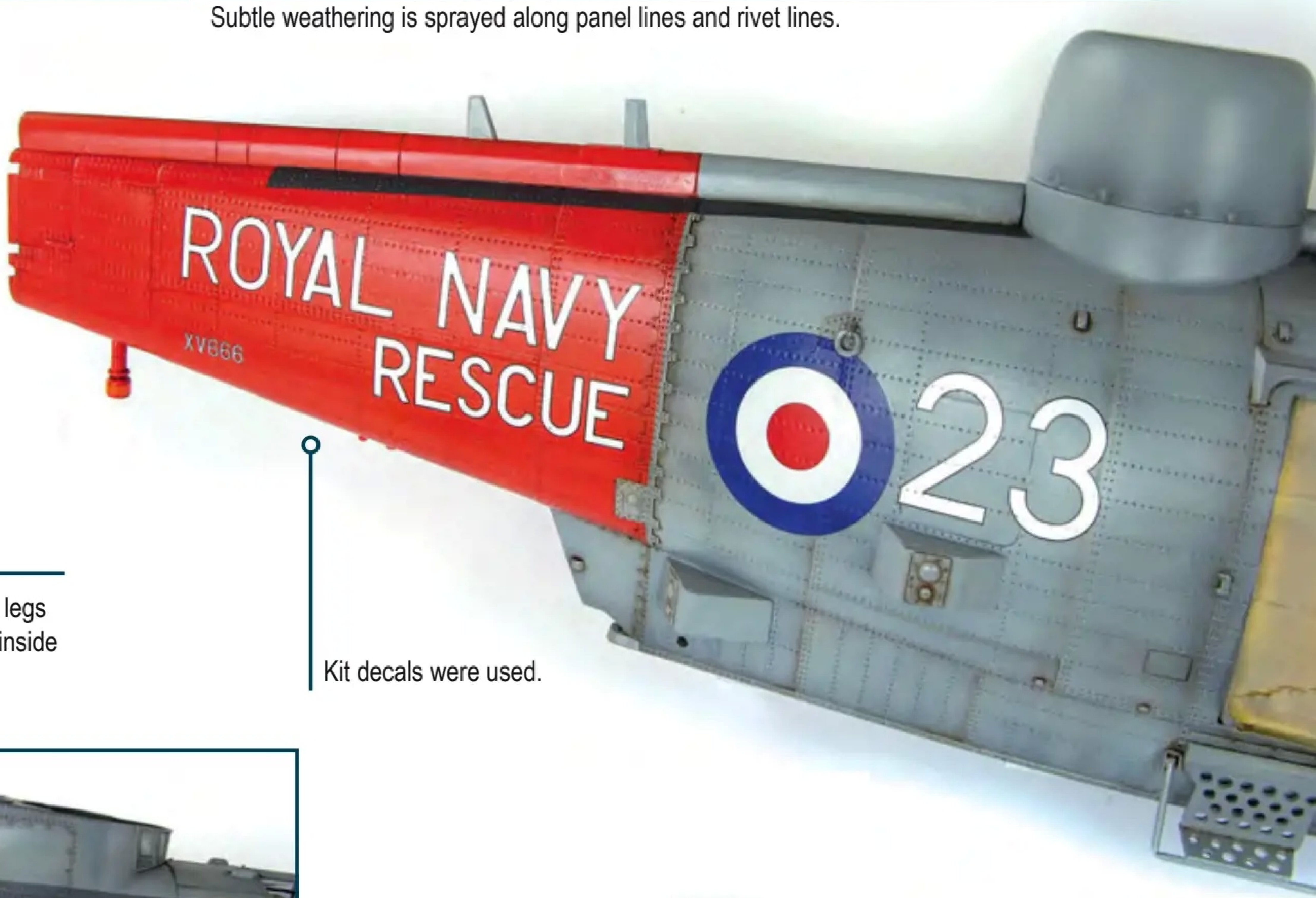
Fuselage painting is nearly done.


Different shades of grey are masked and sprayed.


Subtle weathering is sprayed along panel lines and rivet lines.

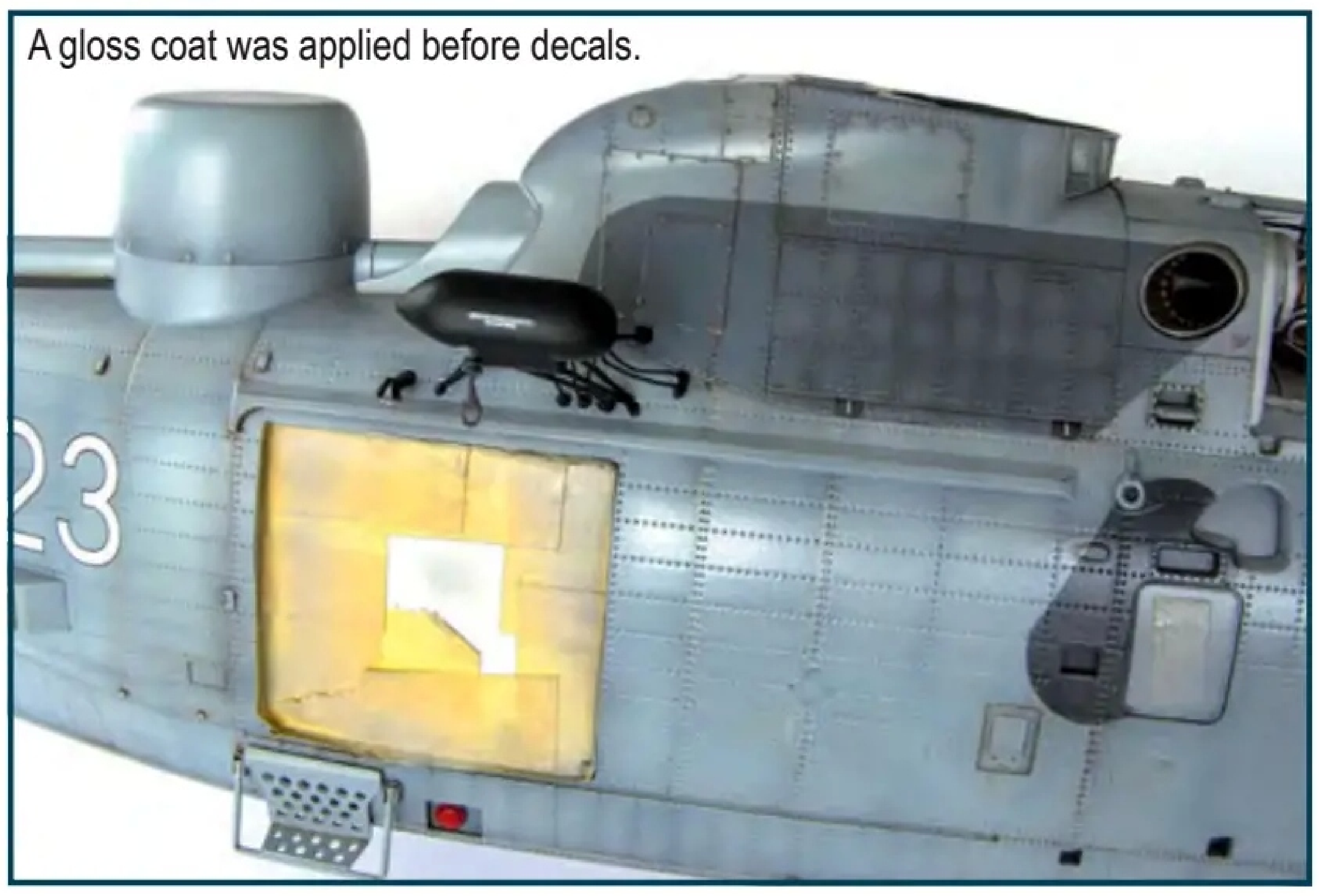

More lovely detail.

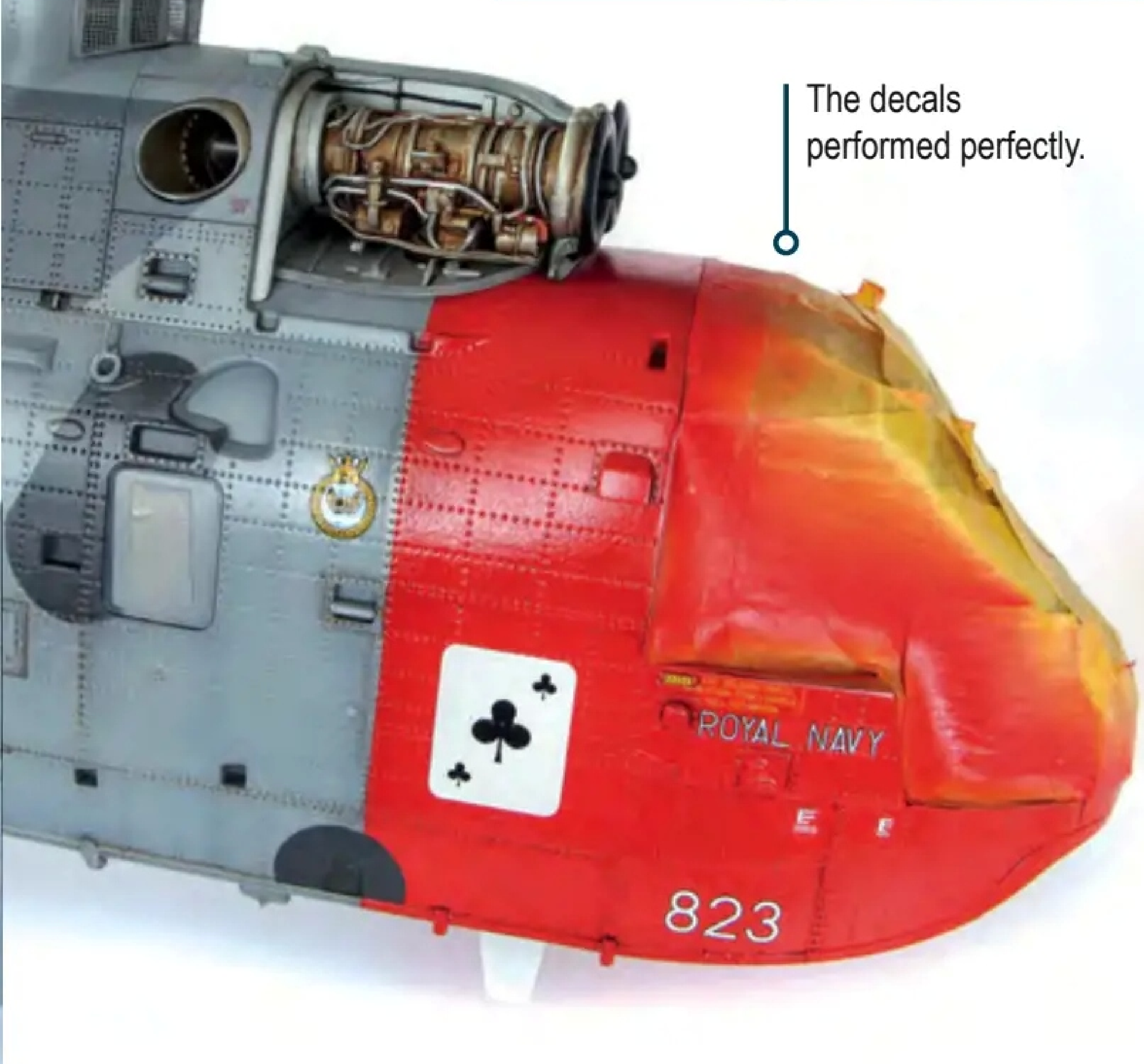
The undercarriage legs are glued in place inside the outriggers.


ROYAL NAVY
RESCUE
XV666
23

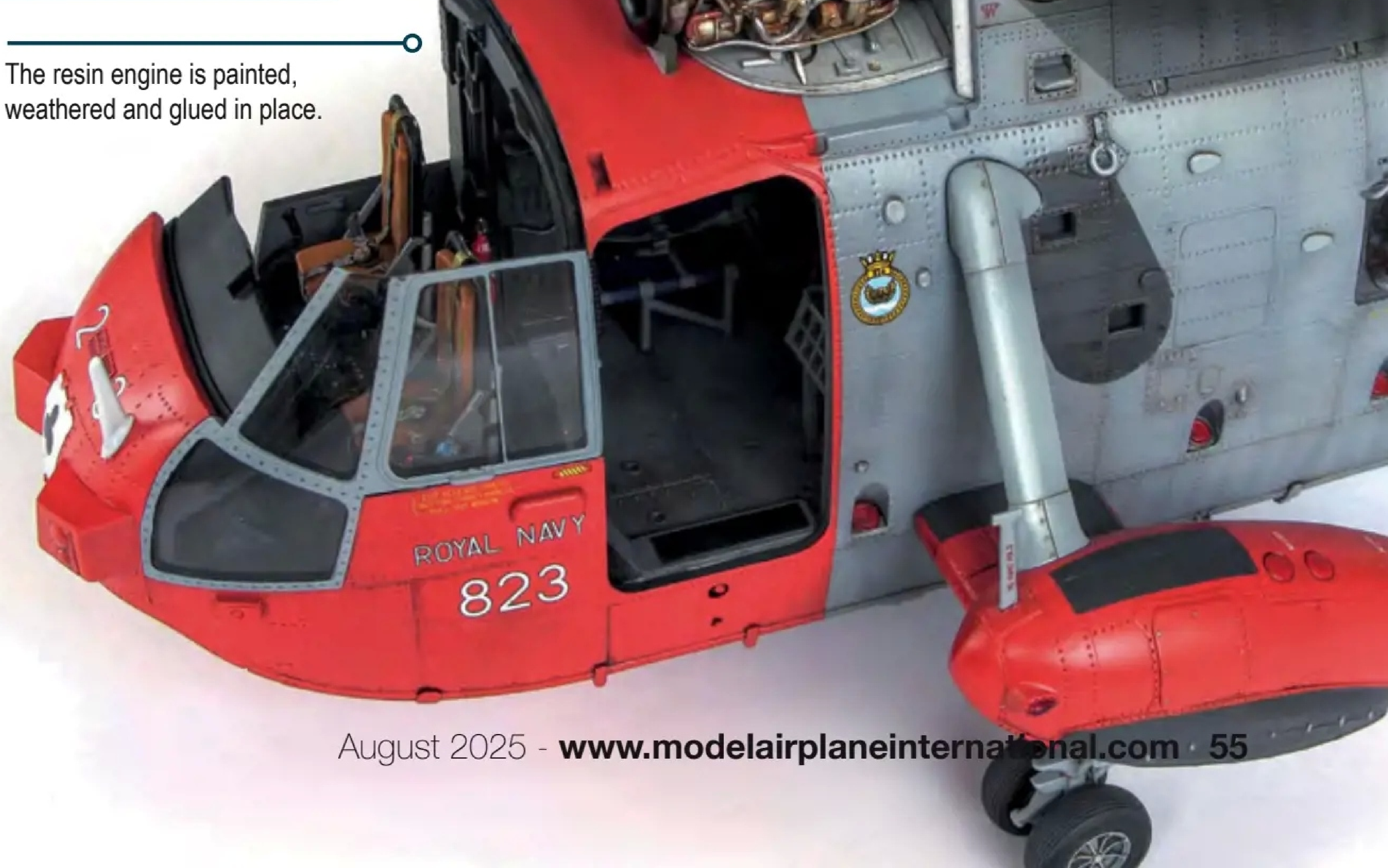
Kit decals were used.

A gloss coat was applied before decals.




ROYAL NAVY
823

The decals performed perfectly.


ROYAL NAVY
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The resin engine is painted, weathered and glued in place.

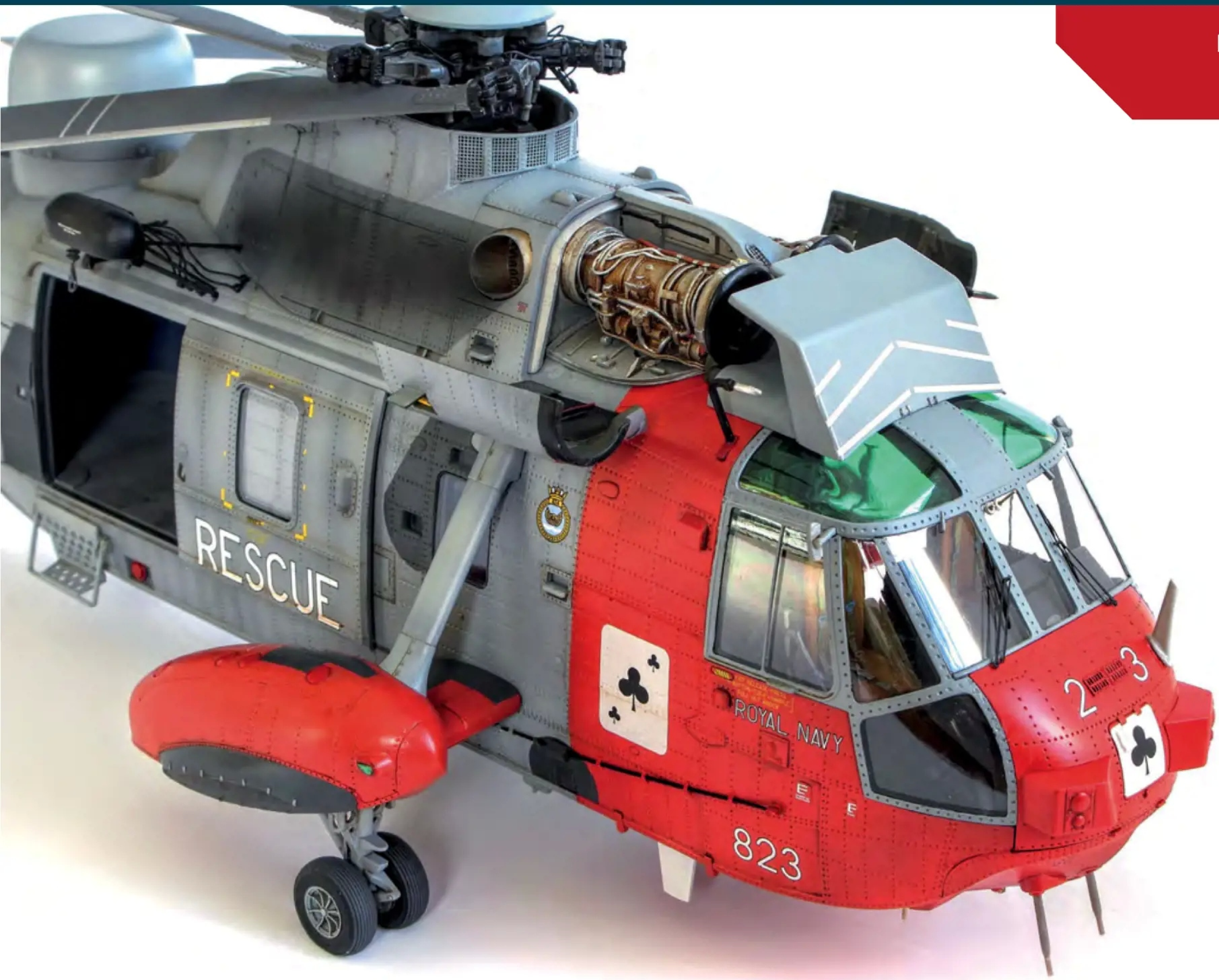
A starboard side view of the engine and the exhaust.

The tail is folded.

CONCLUSION

This is a brilliant model from Airfix, packed with detailed parts and options. It could be daunting with the number of steps (186) in the instructions, but take it carefully and the result will be worthwhile.

Highly recommended. ■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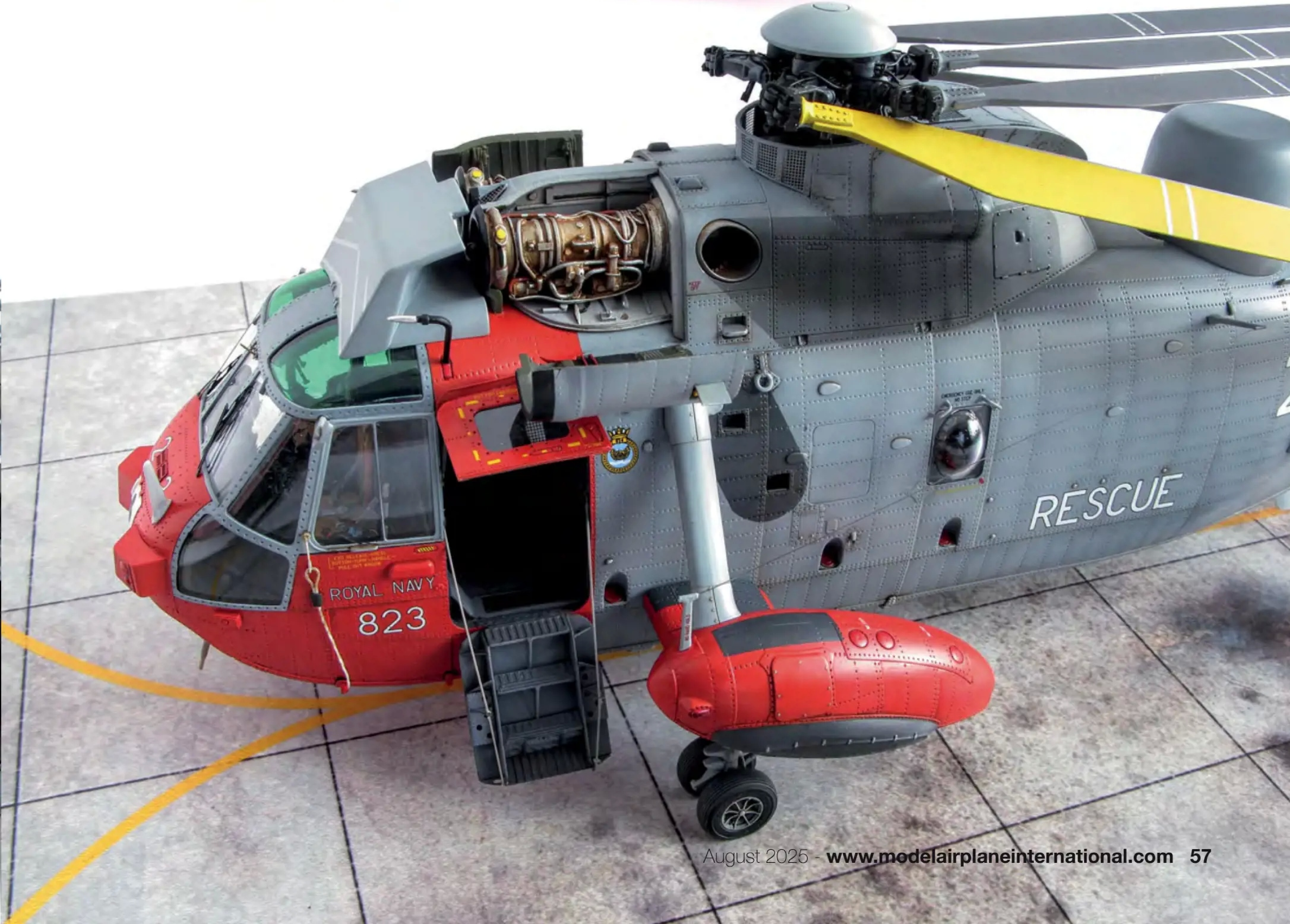
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RESCUE

CRY HAVOC AND LET SLIP THE DOGS OF WA

KIT PREVIEW HK Models Kit No. 01E042 - A-20G Havoc RAAF HK Models Master Version

The Editor examines HK Models' new 1:32 scale A-20G Havoc RAAF HK Models Master Version Limited Edition

RAAF Bostons operated exclusively with 22 Squadron. They saw front-line action between November, 1942 and November, 1944. The first Bostons used by the RAAF were DB-7Bs and A-20Cs.

Early use of Bostons in New Guinea revealed a fatal flaw. Three aircraft were destroyed when 20 lb fragmentation bombs exploded prematurely after being released from the bomb-bay. The discontinuation of these bombs on Boston missions was the simple solution to this tragic problem.

22 Squadron Bostons at Port Moresby sometimes operated alongside 30 Squadron RAAF Beaufighters. The role of the Boston was that of a conventional bomber on its first target run, with additional strafing runs over the target area taking advantage of its heavy forward-firing guns.

Operations were conducted under the typically appalling conditions encountered in the South-Western Pacific Theatre. Crews fought malaria, harsh heat, stifling humidity, tropical thunderstorms and unfriendly wildlife before even leaving the ground. RAAF Bostons encountered heavy anti-aircraft defences, and the long distances flown over water and jungle presented real dangers. As if all this was not bad enough, many downed aircrews were executed - some being beheaded.

The local conditions were a constant challenge to maintenance personnel, but the Boston proved to be a reliable workhorse and was popular with its crews.

22 Squadron followed the Allied advance; island-hopping from Moresby to Goodenough Island, to Kiriwina Island, to Noemfoor and finally to Morotai.

In June 1944, 22 Squadron received replacements for its weary Boston IIIs. The turreted A-20G added welcome extra bomb-carrying capacity. The added defensive capability afforded by the Havoc's power-operated Martin turret was academic at this stage of the Pacific war - air resistance by Japanese forces was almost unheard of.

29 A-20G Havocs (Boston IV) were eventually delivered to 22 Squadron.

The service life of these aircraft was cut prematurely short by a Japanese air-raid on 22 Squadron's base at Morotai Island. This raid destroyed eleven and damaged two A-20s. This was the end of Boston/Havoc operations for the RAAF. The Squadron was immediately withdrawn to Noemfoor to be re-equipped with Beaufighters.

22 Squadron Bostons operated alongside USAF Squadrons in New Guinea operating the same aircraft type. Many Bostons still lie abandoned in the jungles of the South-Wester Pacific. During the 1980s, an RAAF-sponsored mission recovered two Boston airframes in excellent condition. Both are in advanced states of restoration. One will remain in Australia, and one will be returned to New Guinea for their War Memorial.

IN THE BOX

HK Models originally released their 1:32 scale A-20G Havoc Over Europe (Kit N01E039) in 2023 as the first in a series of Havocs. Now HK Models has added a second kit to the family, the A-20G Havoc RAAF (Kit No. 01E042).

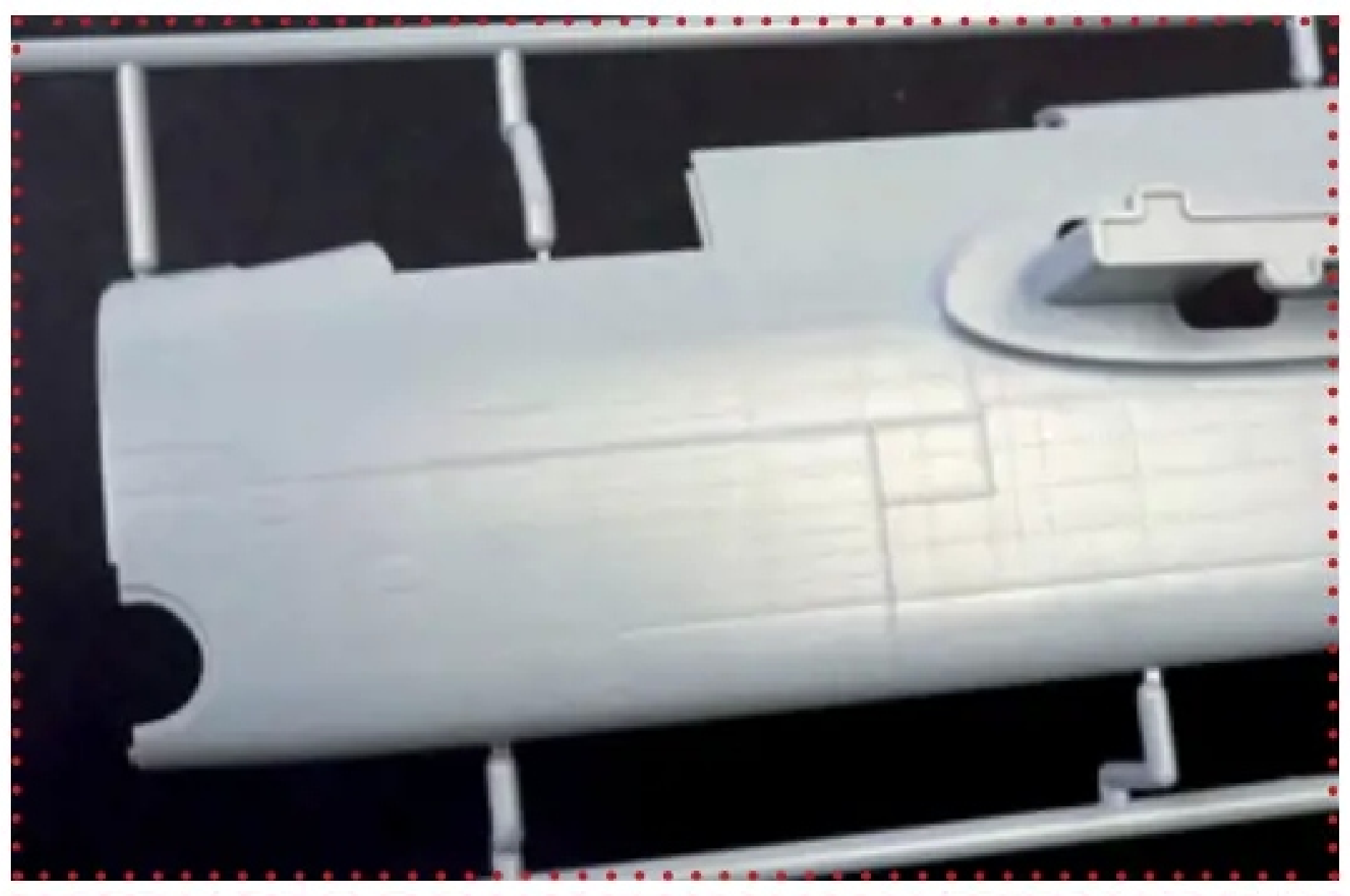
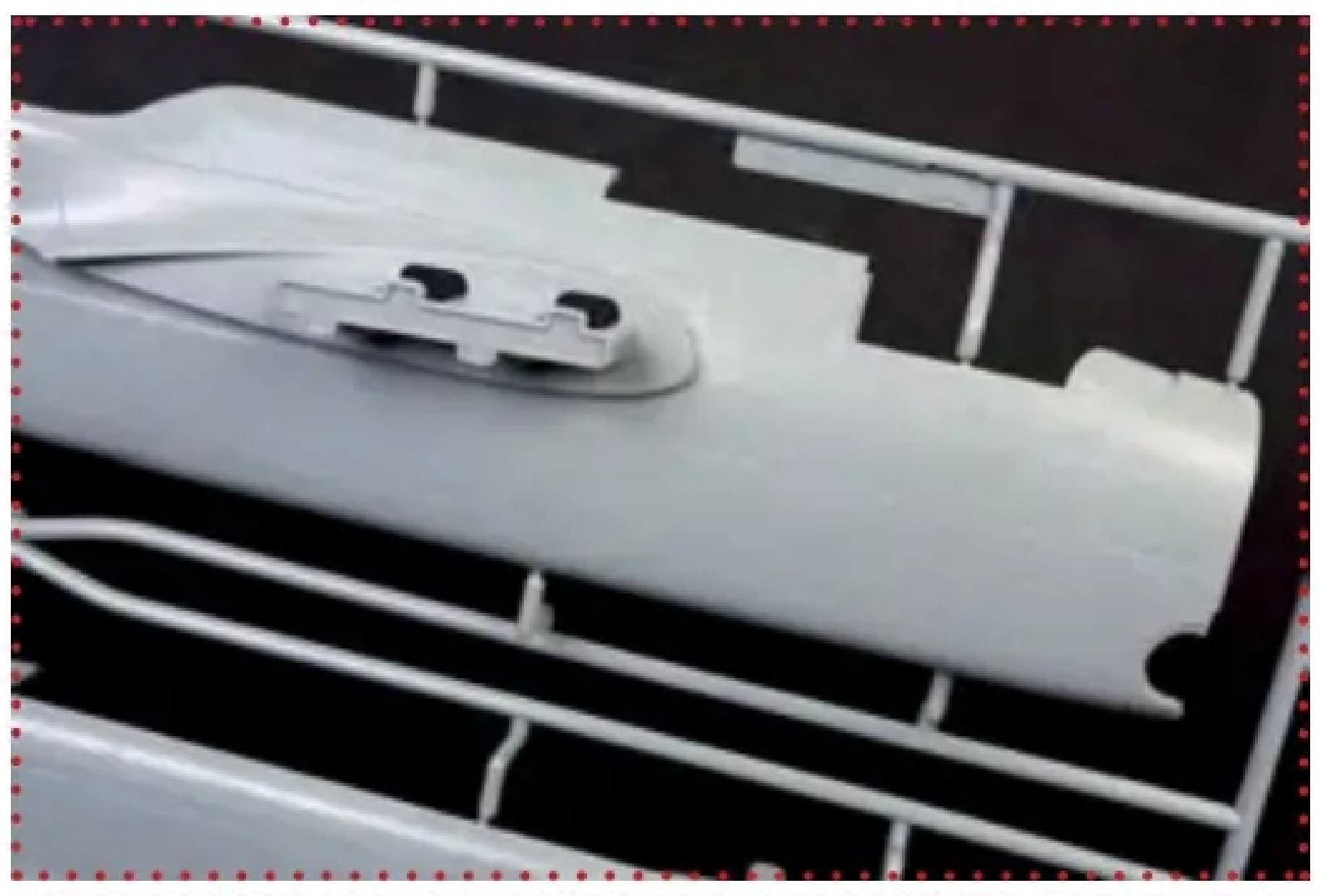
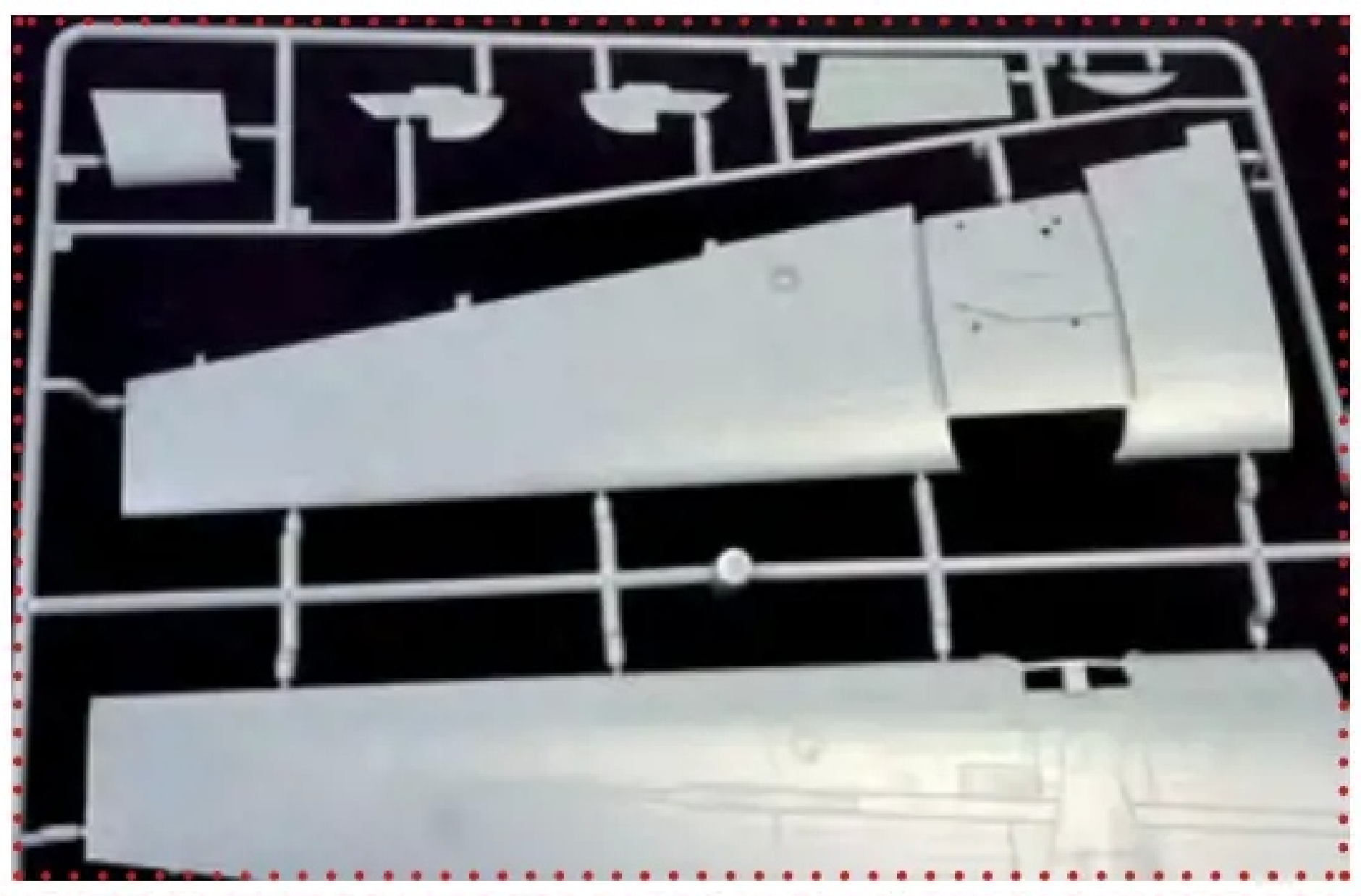
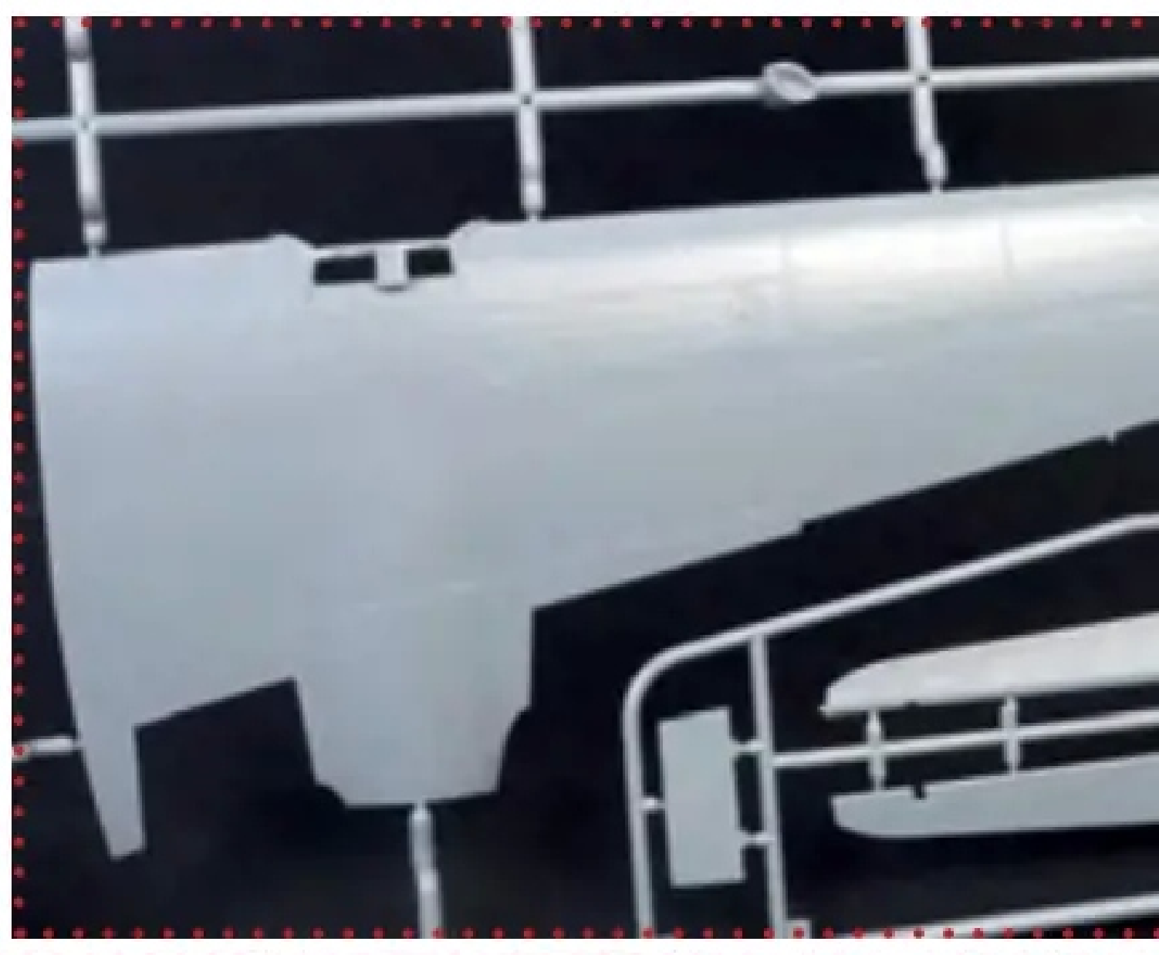
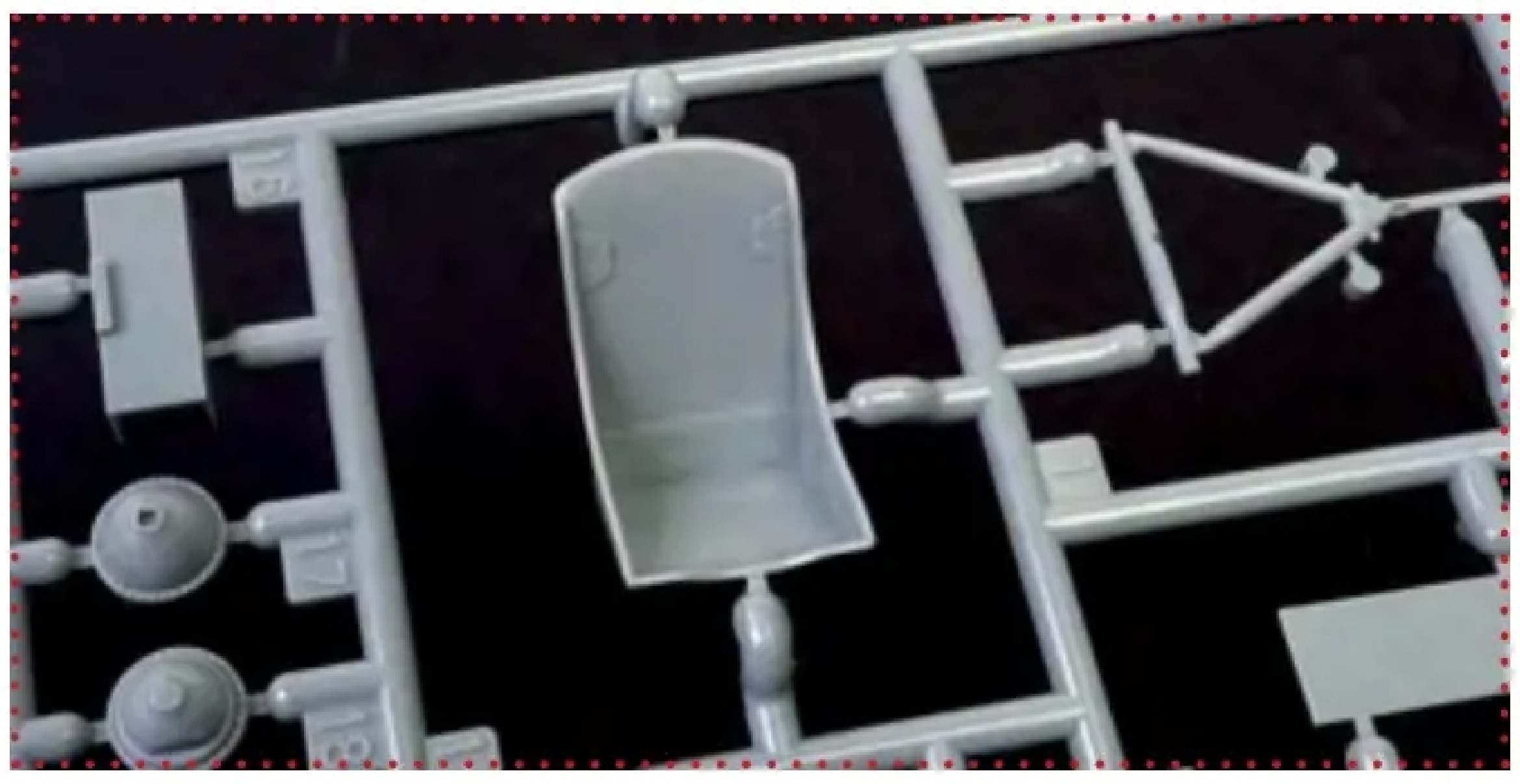
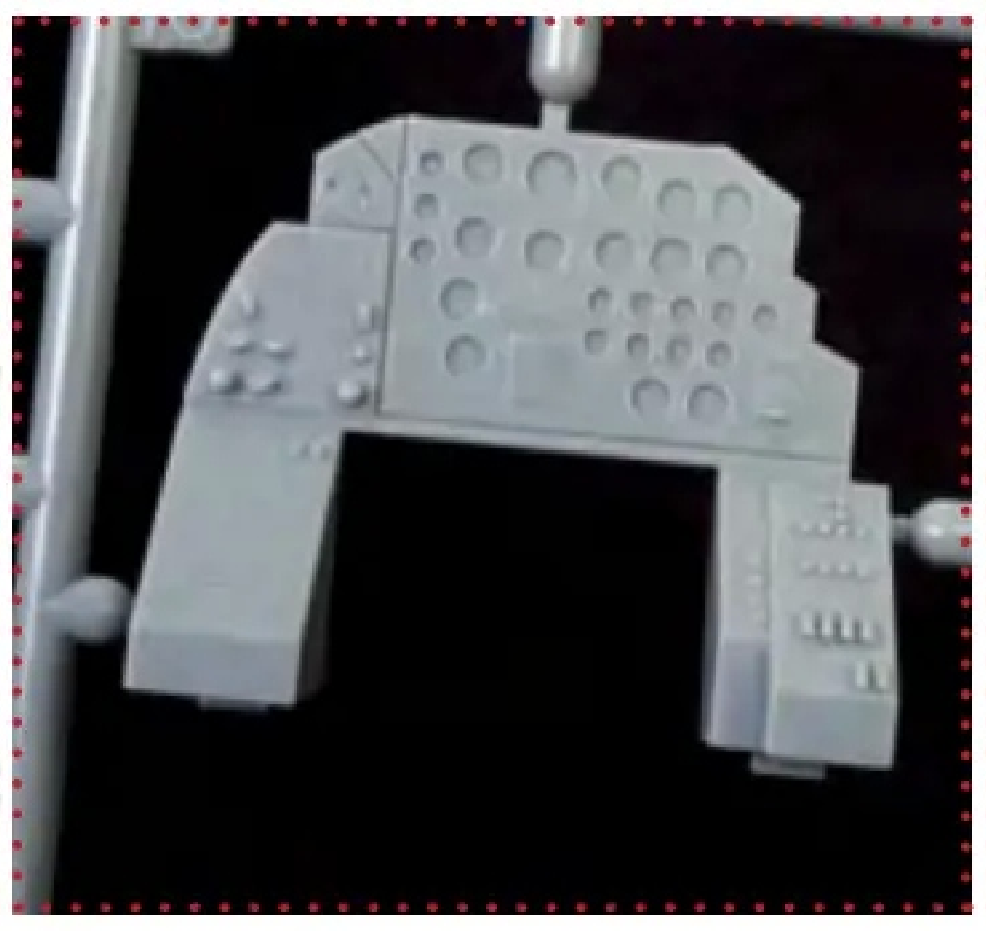
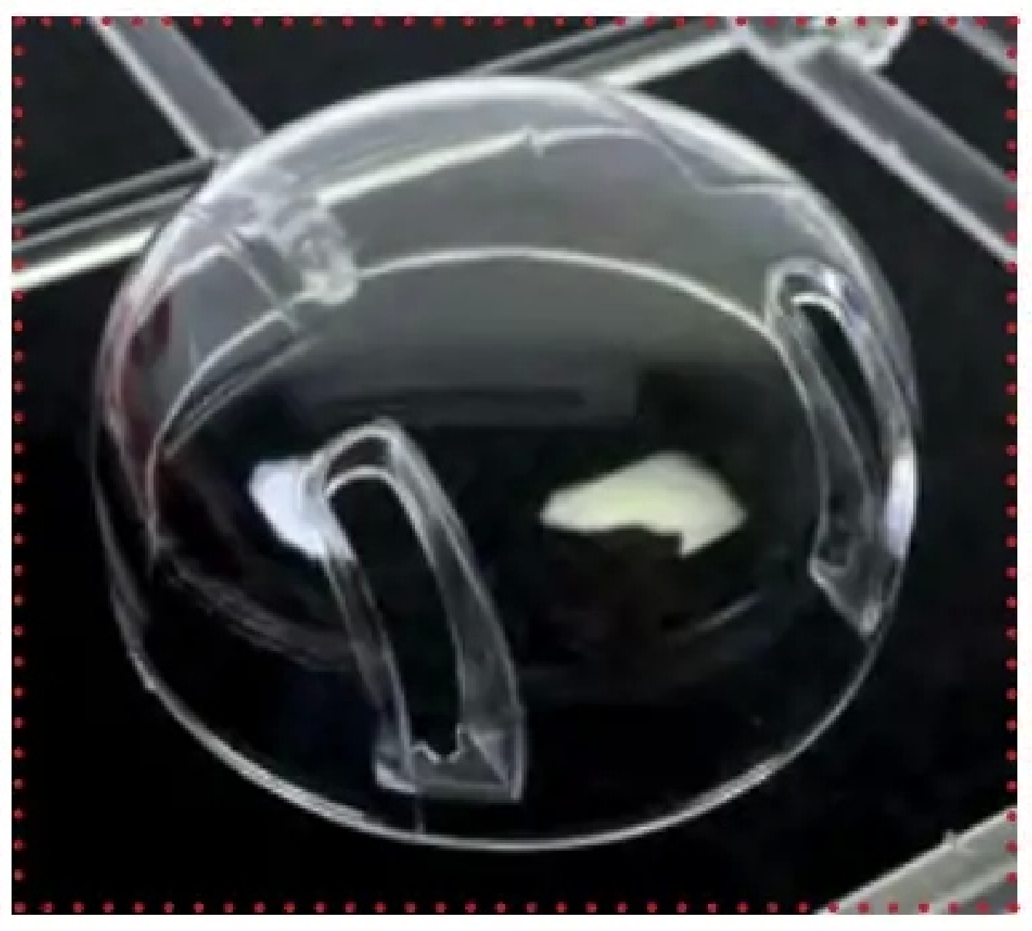
HK Models has now re-released this kit. I am reviewing the Master Version, Limited Edition which includes white metal landing gear, 18 Master Model brass machine gun barrels and a frameable artwork.

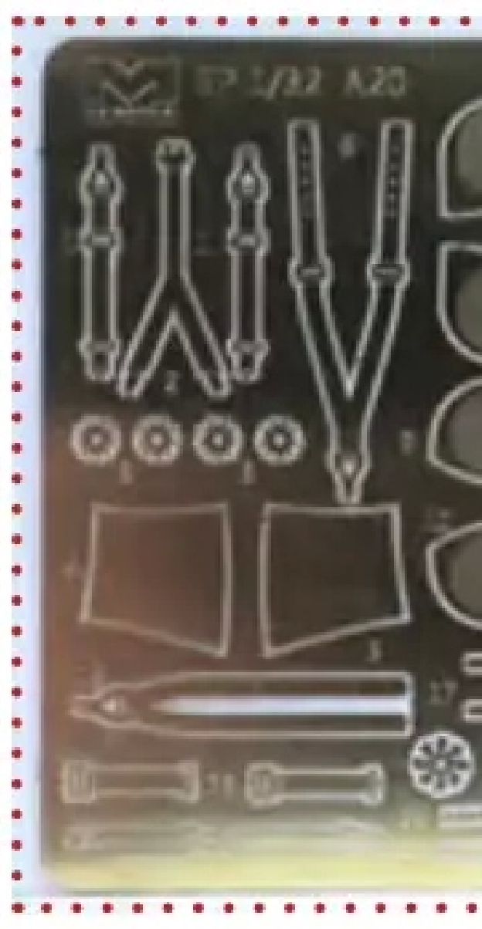
The model represents the most common variant of the A-20G with the six-gun nose and turret. The earliest production G models had a four-gun nose and no turret.

The kit comprises 498 parts in grey plastic, 17 parts in clear plastic, 18 x Master Model .50 cal. machine gun barrels, four white metal

The parts count may sound high but keep in mind that more than 300 of these parts are for the engines alone.

The outline of HK Models's 1:32 scale A-20G Havoc captures the spirit of the Havoc with its skinny fuselage, bulged in the middle for the Martin turret; the big fin, the rakishly angled horizontal stabilisers; and the near flat dihedral of the graceful wings.

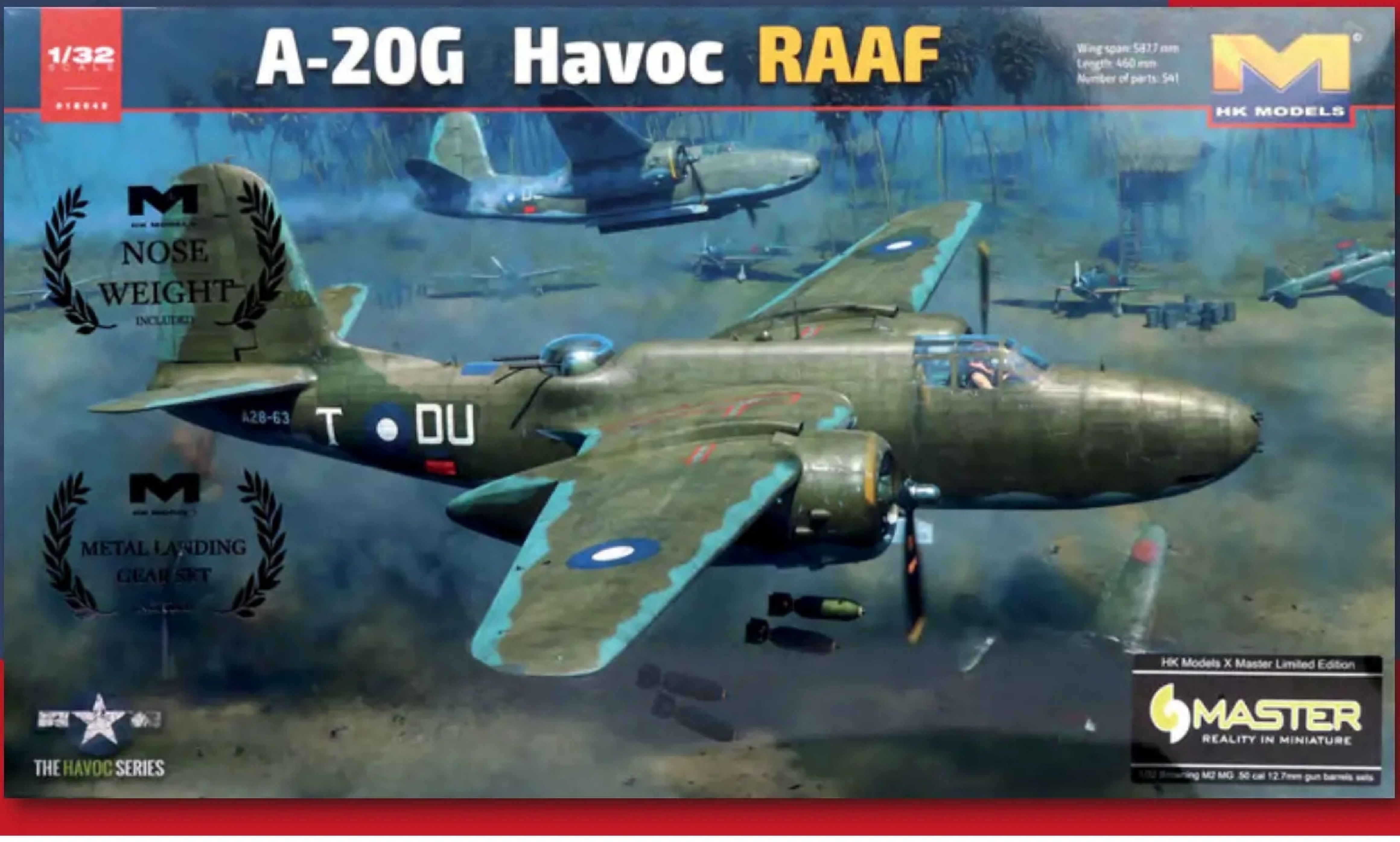










R!

Limited Edition

1:32



Surface detail is very crisp and restrained. This is made up from recessed panel lines and rivets.

HK Models has also moulded convincing oil can effect onto the major metal surfaces. This delivers a rippled surface to the wings, tail planes and fuselage. I think it looks great.

There are a few sink marks or visible ejector pin marks in various places but they will mostly be hidden when the kit is complete.

The undercarriage, engines and cockpit are very well detailed.

The cockpit features separate rudder pedals and control column, seat, rear shelf with oxygen bottle, instrument and switch panels moulded as a single piece and pilot's head armour.

The dials on the instrument panels are simple circles with raised bezels. HK Models supplies a single decals to overlay the instrument panel. It looks good. However, there are already a number of after-market updates from Eduard and Yahu to replace the kit panel if you would prefer.

Plenty of structural detail is moulded onto the inside of the engine nacelles.

The front undercarriage leg and wheel bay are moulded to the bottom of the cockpit floor.

HK Models has very thoughtfully supplied shaped metal nose weights for the fuselage. This will save a lot of time and trouble squeezing enough sinkers in the nose to keep the front wheel grounded.

The Martin turret also looks very well detailed. The on-piece frameless turret is clear and free from distortion. The turret will rotate and the guns elevate You will be able to completely assemble the turret and insert it into the upper fuselage at the end of assembly and painting.

The mid-fuselage interior and bomb bay are fabulous. Bulkheads and inner sidewall sections are included. Four 500lb bombs are also offered. The bomb bay doors may be posed open or closed. Life raft compartment and radio boxes complete the detail package. The only downside is that you will see very little of the interior once the fuselage is closed up. Take lots of photos!

Bulkheads are fitted all the way to the end of the fuselage.

The canopy features a separate long upper hatch that will also display the stowed life raft if posed open. Another nice touch is the pilot's sliding window panels. The forward panels on each side may be posed open, closed, or to taste.

18 x .50 cal machine gun barrels are provided by Master Model from Poland. These are gorgeous.

Photo-etched armour panels are offered for the fuselage. I think I will replace mine with very thin Tamiya 0.1mm PlaPaper using the photo etched parts as a template.

Ammo boxes and other details fit out the nose and the six nose guns. Only minor surgery will be required to remove the plastic barrels.

The pilot's entry hatch is a separate part, as is the rear lower hatch for the navigator / gunner.

Although they are not mentioned in the instructions, white metal parts are supplied for the assembly of the undercarriage legs. Wheels are subtly bulged and flattened. It looks like you will have to fit the main undercarriage legs inside the upper wing locating holes before the nacelles are glued into place. Take great care while handling the partly assembled model.

Flaps, rudder, elevators and ailerons are separate parts that may be posed to taste.

The big wings are secured with a locking tab arrangement. This should result in a firm, gap-free fit and perfect dihedral.

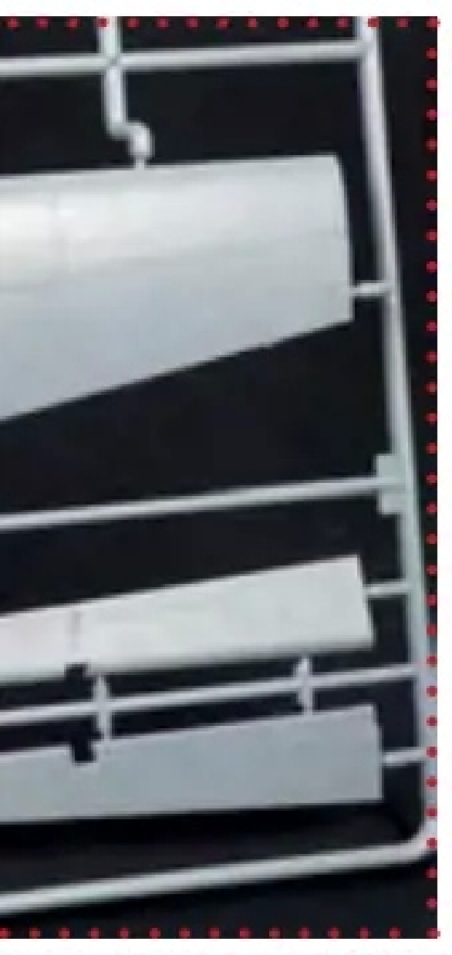
Wing tips have separate clear navigation lights.

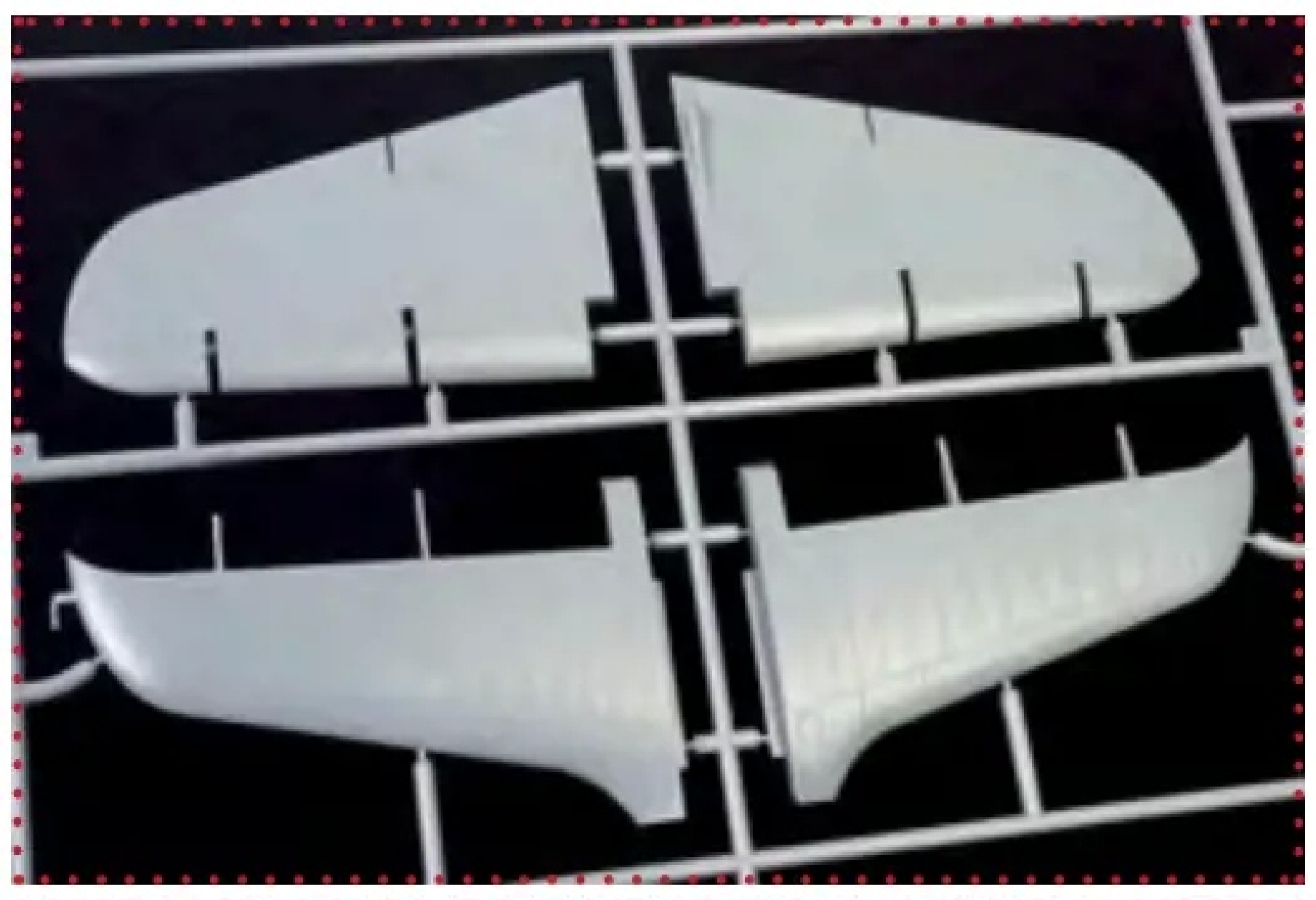
The engines are bristling with detail thanks to a whopping 154 parts per side. As you might expect, all the features of the Wright R-2600-23 Twin Cyclone 14-cylinder air-cooled radial piston engines are included here.

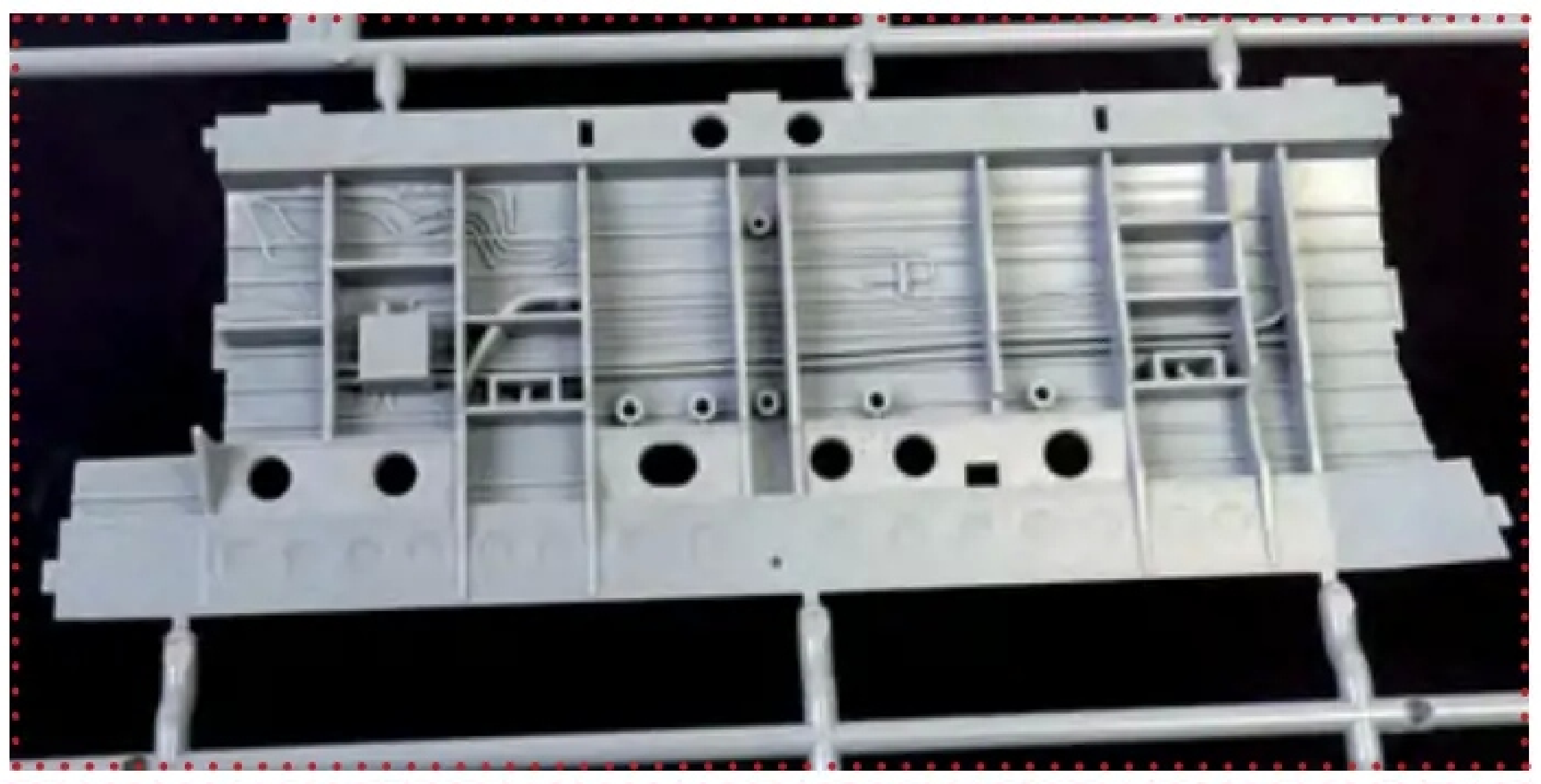
A large 28 page instruction booklet walks through assembly step-by-step.

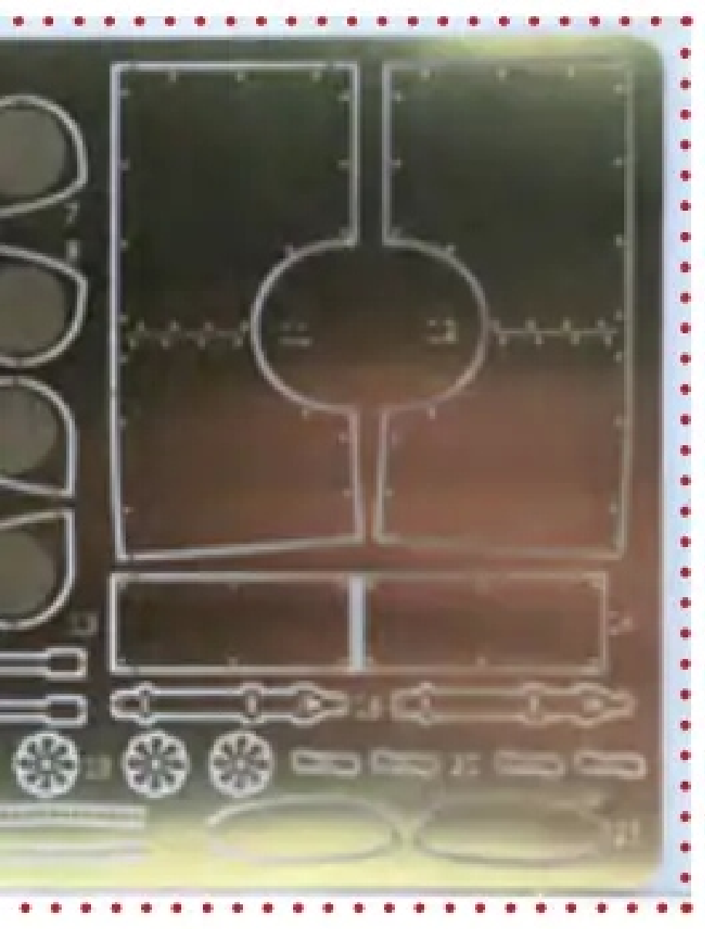
Markings are supplied for two RAAF A-20G-40-DO on loan from the USAAF and attached to 22 Sqn. RAAF on Noemfoor Island in the Summer of 1944. Code letters are presented as white. It is possible that these were actually RAAF Sky Blue, although the paint quickly washed out to a very pale shade (close enough to white) under the harsh Pacific sun. Serial numbers on DU-T are white but I am pretty sure that they should be Medium Sea Grey.

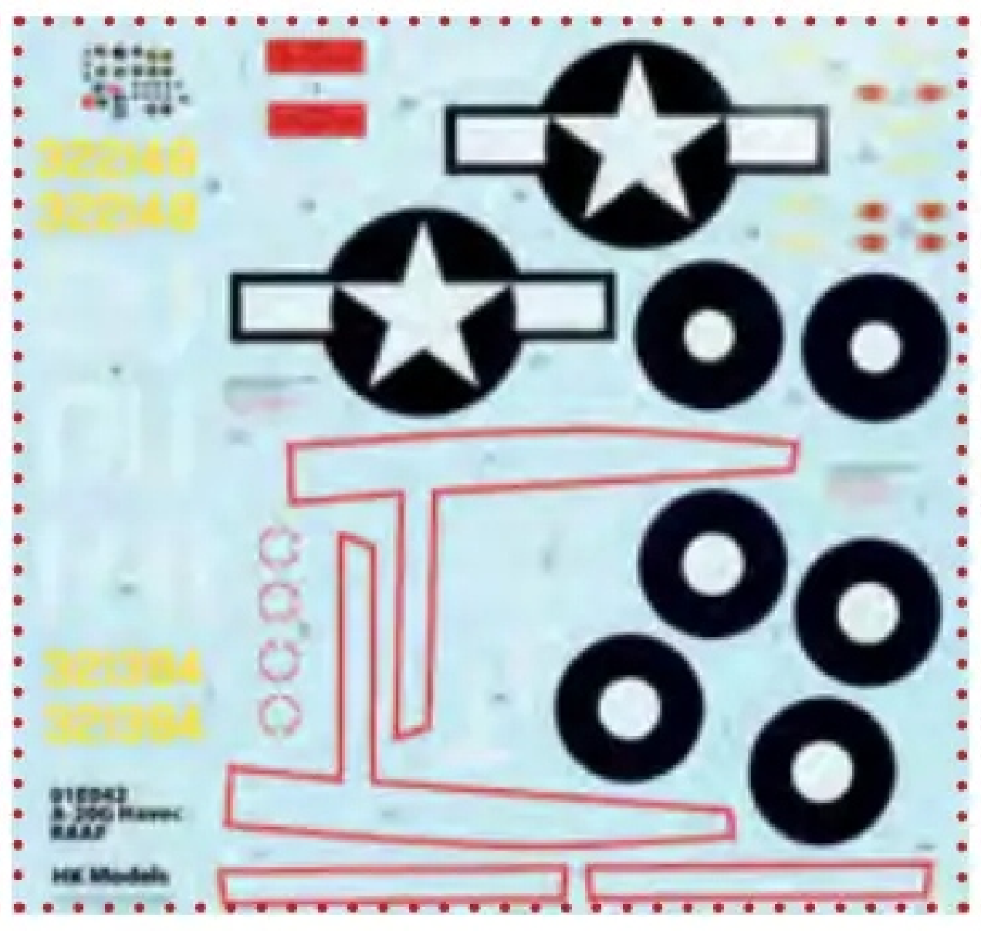
The decal sheet is perfectly printed and colours look great.











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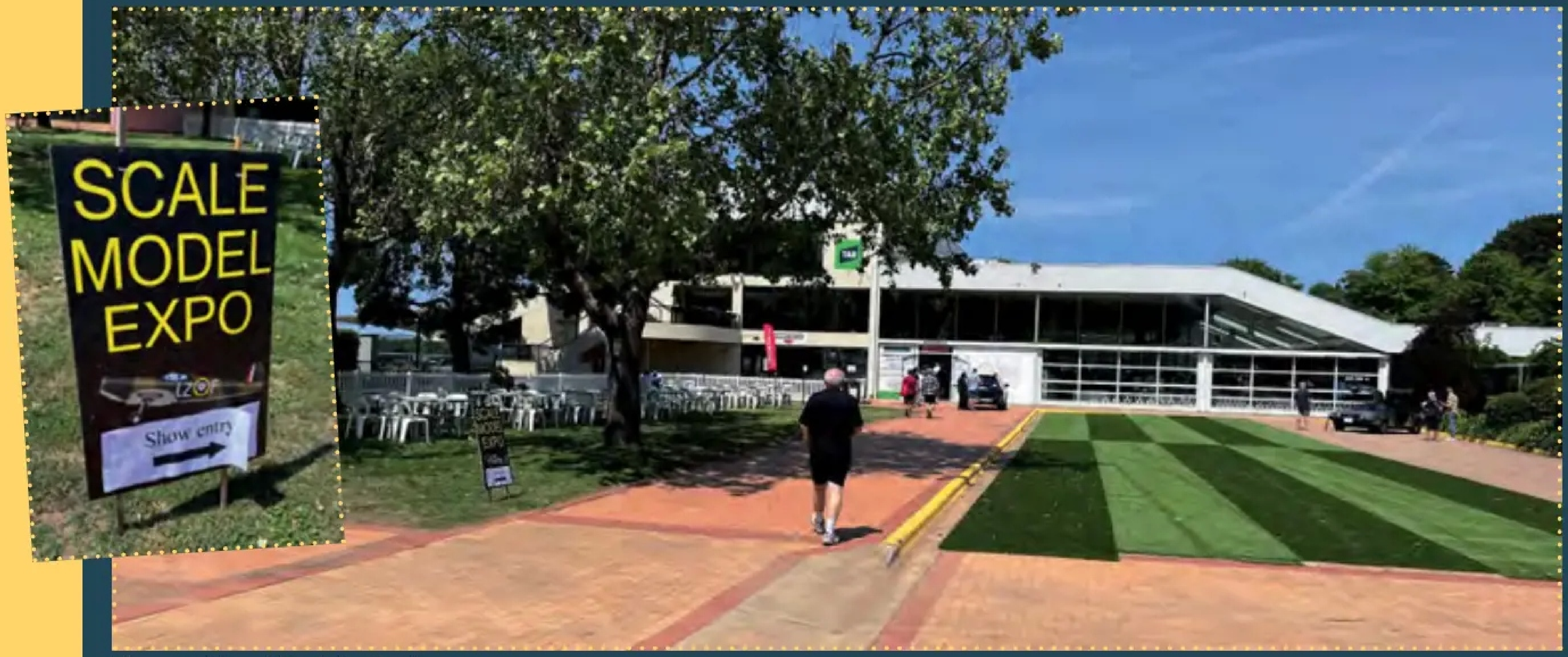
CONCLUSION

I was delighted to see that HK Models has added the 1:32 scale A-20G Havoc RAAF to its line-up.

I do hope that we will also see 1:32 scale DB-7, A-20B/C and P-70 Night Fighter in HK Models boxes too!

HK Models's A-20G Havoc is an excellent addition to their range of 1:32 scale medium and heavy US bombers. ■

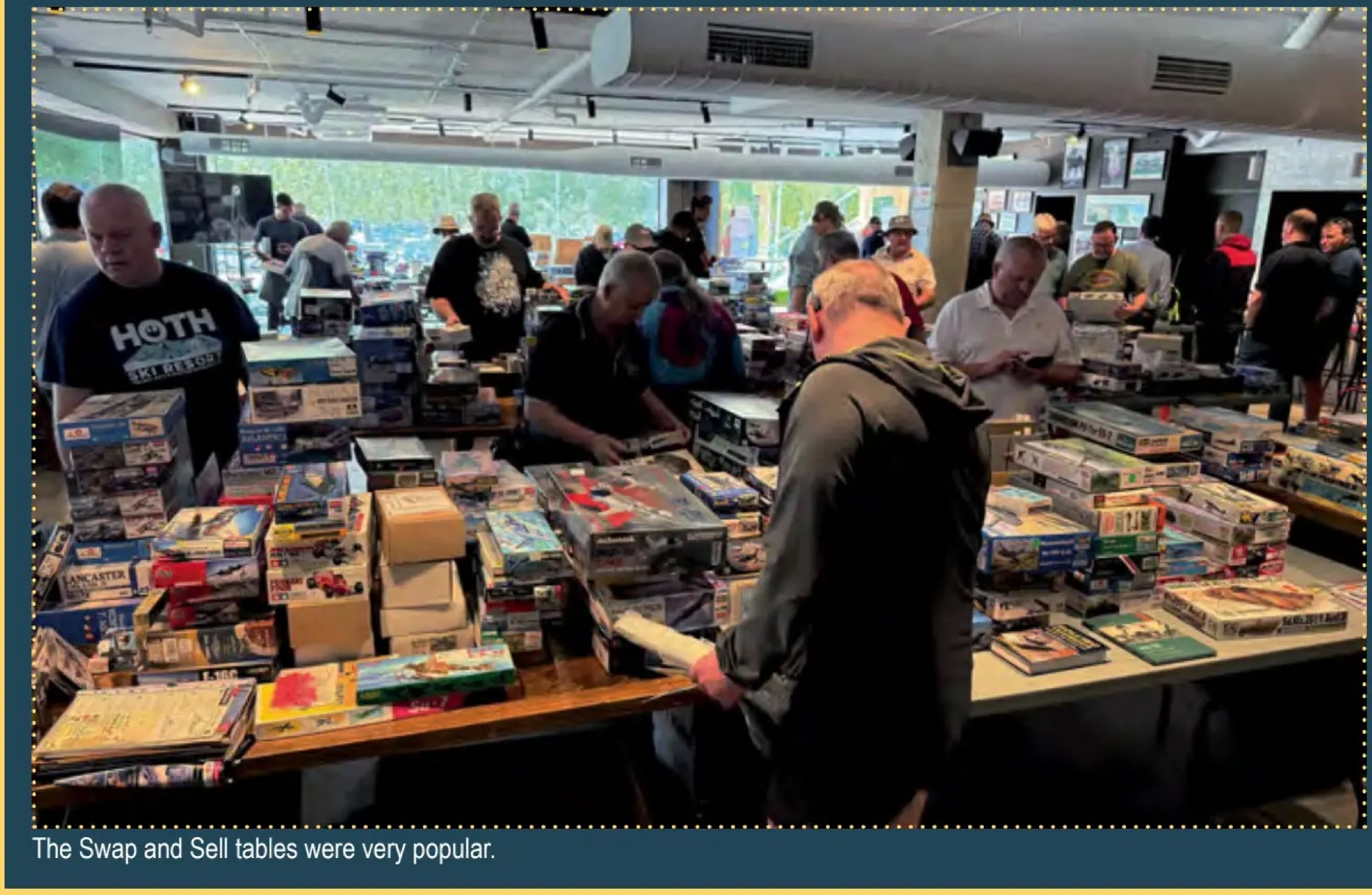
SCALE ACT 2024



Thoroughbred Park in Canberra

JURASSIC PARK
Friendly faces at the entry.

SMS
10
EVENT EXCLUSIVE
NEW COLOUR
BLACK GRAPE
Traders were busy



The Swap and Sell tables were very popular.

The Editor visits the Scale ACT 2024 model show at Thoroughbred Park, Canberra.

Many people are surprised to learn that the capital city of Australia is not Sydney or Melbourne, but Canberra.

The location of Canberra was selected as Australia's seat of Government in 1908. There was no pre-existing town. Canberra was to be a planned city inside the newly defined Australian Capital Territory (ACT), designed by American architect Walter Burley Griffin. Construction commenced in 1913.

The Federal Parliament moved to Canberra in 1927. It met in what was intended to be a temporary location, but this iconic building remained the seat of Parliament until 1988.

Today, Canberra is the home of many national institutions including the National Library, the Australian Institute of Sport, the National Gallery and the Australian War Memorial.

Canberra also boasts an active model club – ACTSMS – which meets monthly and also holds a lively annual model competition that is open to all modellers Australia-wide.

Scale ACT 2024 was held at Thoroughbred Park in Canberra for the second time.

The big auditorium housed the model competition, which comprised an impressive number of models in categories including aircraft, military, science fiction, maritime, junior and more. The number of kits in competition was impressive and the standard was high indeed.

Also under the same roof were traders; local, interstate and even international.

The Swap and Sell room was very busy with a long queue of modellers waiting to pay for their treasures.

A pleasing number of visitors attended over the weekend.

The organisers of Scale ACT 2024 should be congratulated for another well-organised and enjoyable event.

If you're passing by Canberra next year in early-November, Scale ACT 2025 will be well worth a visit! ■

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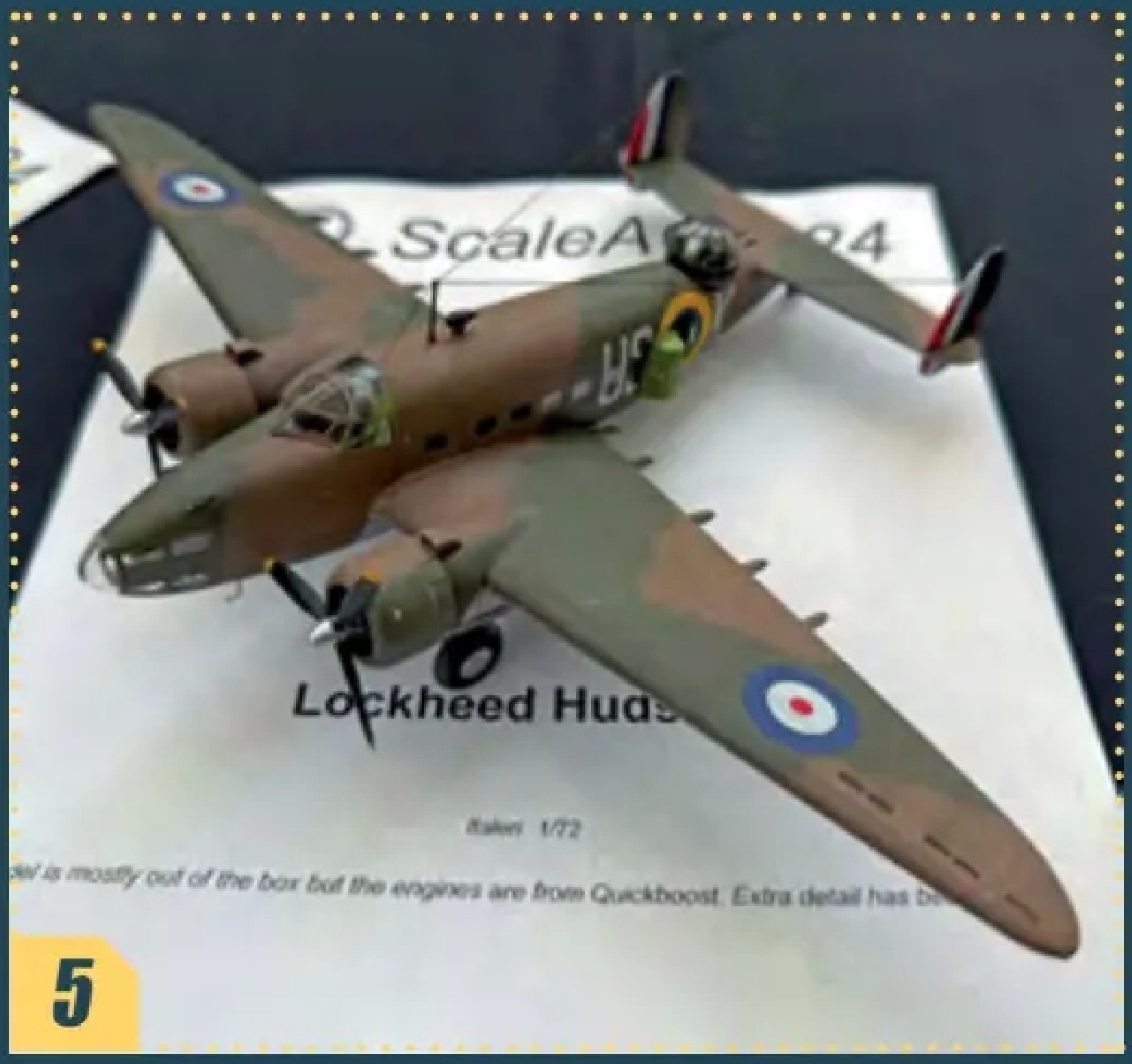


5

Lockheed Huds

6

7

My Little Pig
P-38J Lightning
Lt. J.M. Jarrell
485FS, 370FG
Model Not attached to base!

1. HK Models' 1:48 scale B-25J Mitchell.

2. Zvezda 1:72 scale C-130J Hercules.

3. Airfix 1:48 scale Fairey Gannet.

4. Classic Airships' 1:350 Royal Navy North Sea airship 1917-19

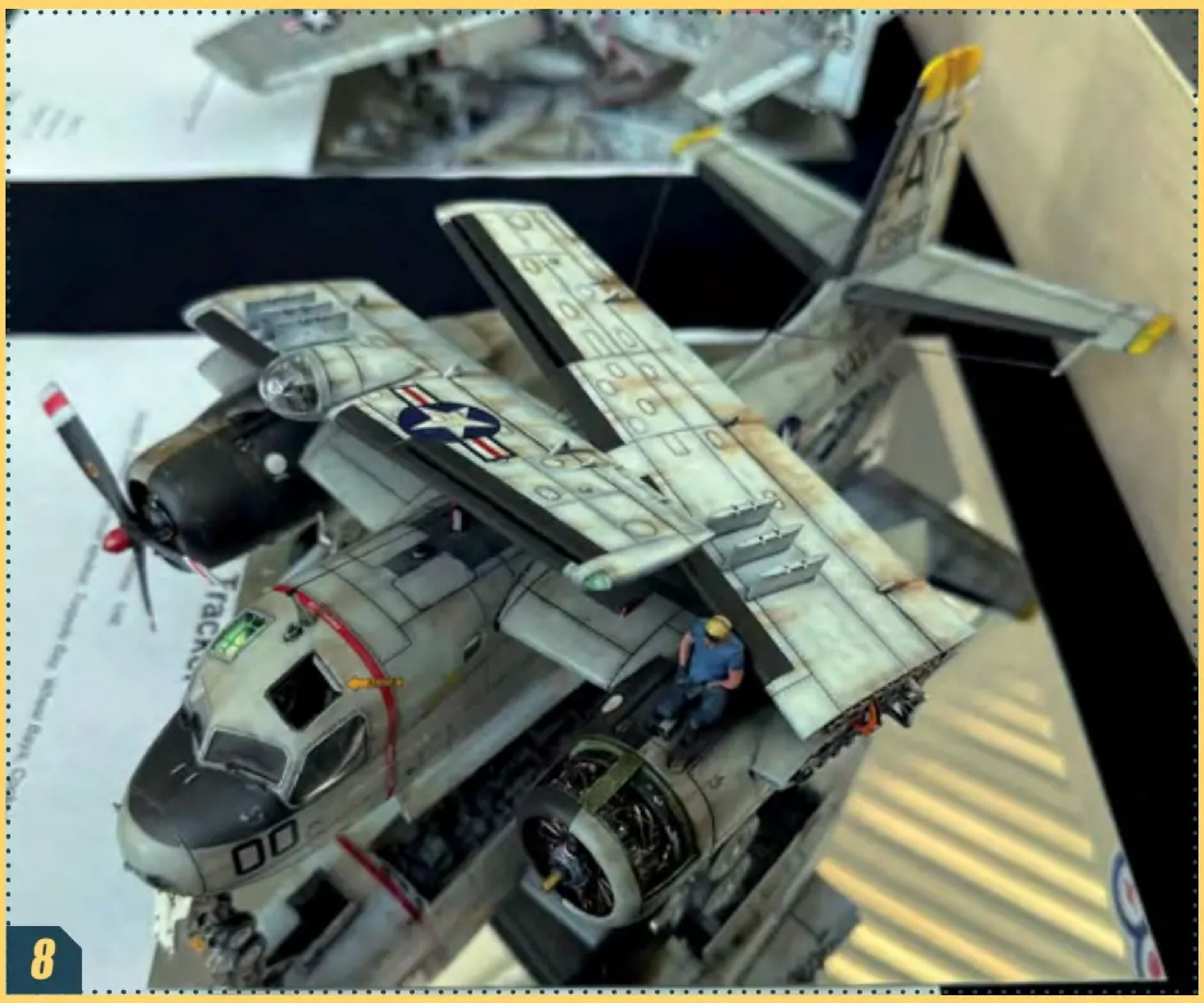
5. Italeri 1:72 Lockheed Hudson.

6. Kinetic 1:48 RAAF Op. OKRA Classic Hornet.

7. Tamiya 1:48 P-38J Lightning.

SHOW REPORT

ACTSMS SCALE ACT 2024


8

REPLIK8 MODELS
A1H Skyraider
Tamiya 1/48
9

10

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12

13

14

8. Kinetic 1:48 S-2A Tracker
9. Tamiya 1:48 A-1H Skyraider
10. Hasegawa 1:48 F-8C Crusader conversion from F-8E
11. Airfix 1:48 scale Avro Anson
12. Academy 1:48 scale A-10C Thunderbolt II
13. Arma Hobby 1:48 Hawker Hurricane, 11 Sqn. RAF 1944, Tamu Burma
14. Halberd Models 1:48 Curtiss SC-1 Seahawk

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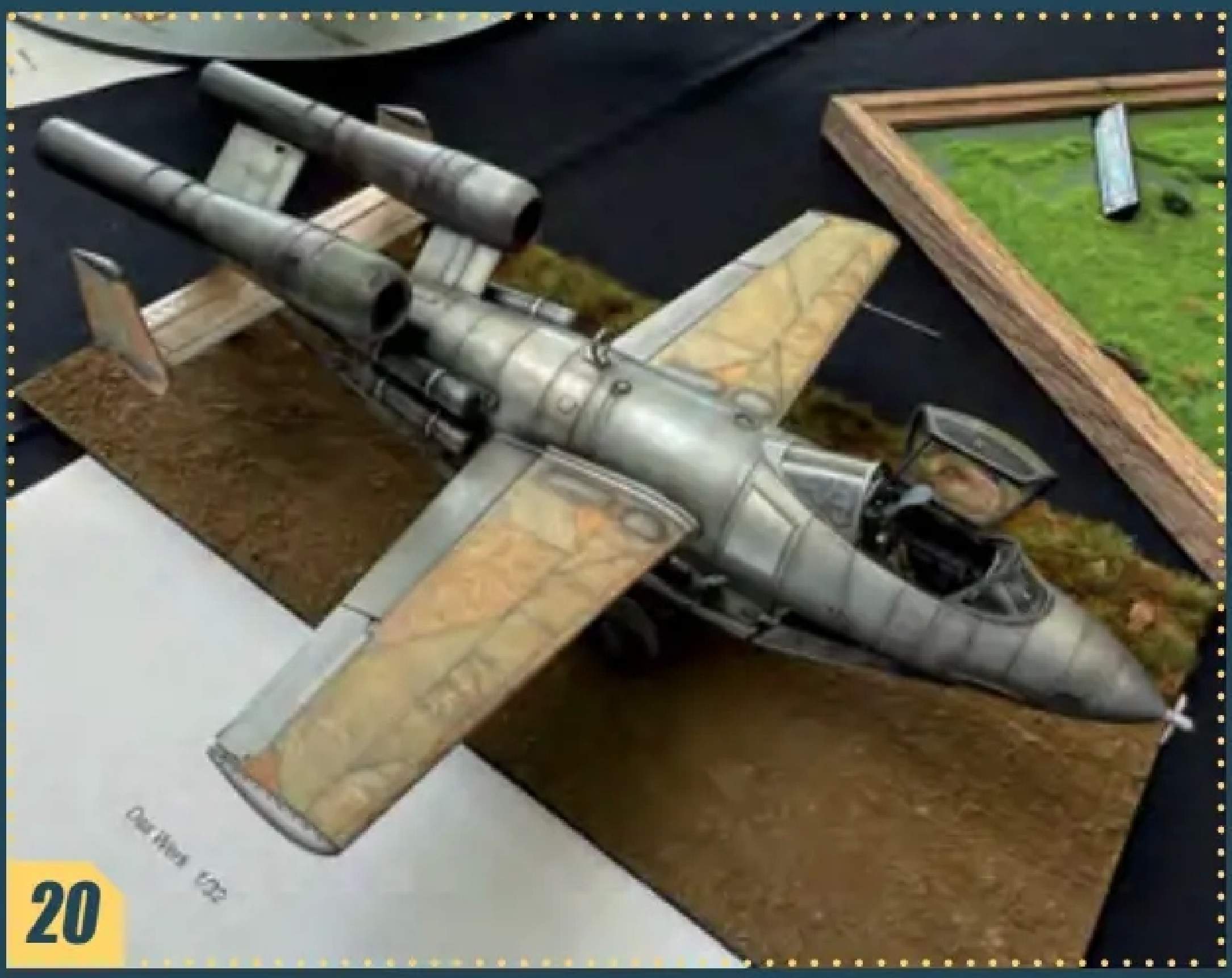
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15. Trumpeter 1:32 TBD Devastator
16. IBG 1:32 PZL P.11c
17. Italeri 1:32 Macchi C.202 Folgore.
18. ICM 1:32 CR-42 Falco
19. Special Hobby 1:32 Westland Whirlwind
20. Das Werk 1:32 EF-126
21. Ki-84 Hayate
22. Fisher Model and Pattern 1:32 F9F-5 Panther
23. Airfix 1:24 Spitfire Mk.VIII

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MAI 242 SEPTEMBER 2025
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RG
V
Grey Nurse

GREY NURSE PT. 3

In Part Three, Mark Casiglia closes in on completing his Tamiya 1:32 Spitfire Mk.VIII

THE SHRIKE

Brian Tomasin builds Zoukei-Mura's 1:32 Focke-Wulf Fw 190 A-4

DORA

IBG 1:72 Focke-Wulf Fw 190 D-9 by Andreas Dyck.

NEWEST GROUNDBREAKING GA-ASI AUTONOMOUS JET DEMO INCLUDES SUCCESSFUL SIMULATED SHOOT-DOWN

SAN DIEGO – 16 June 2025 – General Atomics Aeronautical Systems, Inc. completed a first-of-its-kind test involving multiple aircraft and advanced software on June 11 that included a successful simulated autonomous shoot-down.

A GA-ASI-owned MQ-20 Avenger® unmanned jet used the latest government reference autonomy software in an exercise involving multiple live and virtual aircraft – as well as software supplied by Shield AI.

Because software-defined mission capabilities are evolving so fast, it's critical that aircraft hardware be agnostic as to the origins of these upgrades. GA-ASI's flights have underscored how compliance with what are called "government reference architectures" enables essential interoperability for hardware and software.

In the latest exercise, the MQ-20 Autonomous Collaborative Aircraft demonstrated that it could marshal; do dynamic midair station-keeping with several real aircraft; patrol a simulated combat area; make decisions autonomously; team with human command-and-control; and intercept two live aircraft autonomously – resulting in a simulated successful missile shot against the live targets.

The "live-on-live" event using representative Group 5 unmanned aerial vehicles (UAVs) proved how mature autonomy is today for future platforms.

"This event reflects the kind of interoperability and adaptability we believe is essential for future autonomy efforts," said Michael Atwood, Vice President of Advanced Programs at GA-ASI. "Being able to rapidly integrate and test autonomy elements from multiple vendors helps ensure the most effective capabilities are available to the warfighter, regardless of origin."

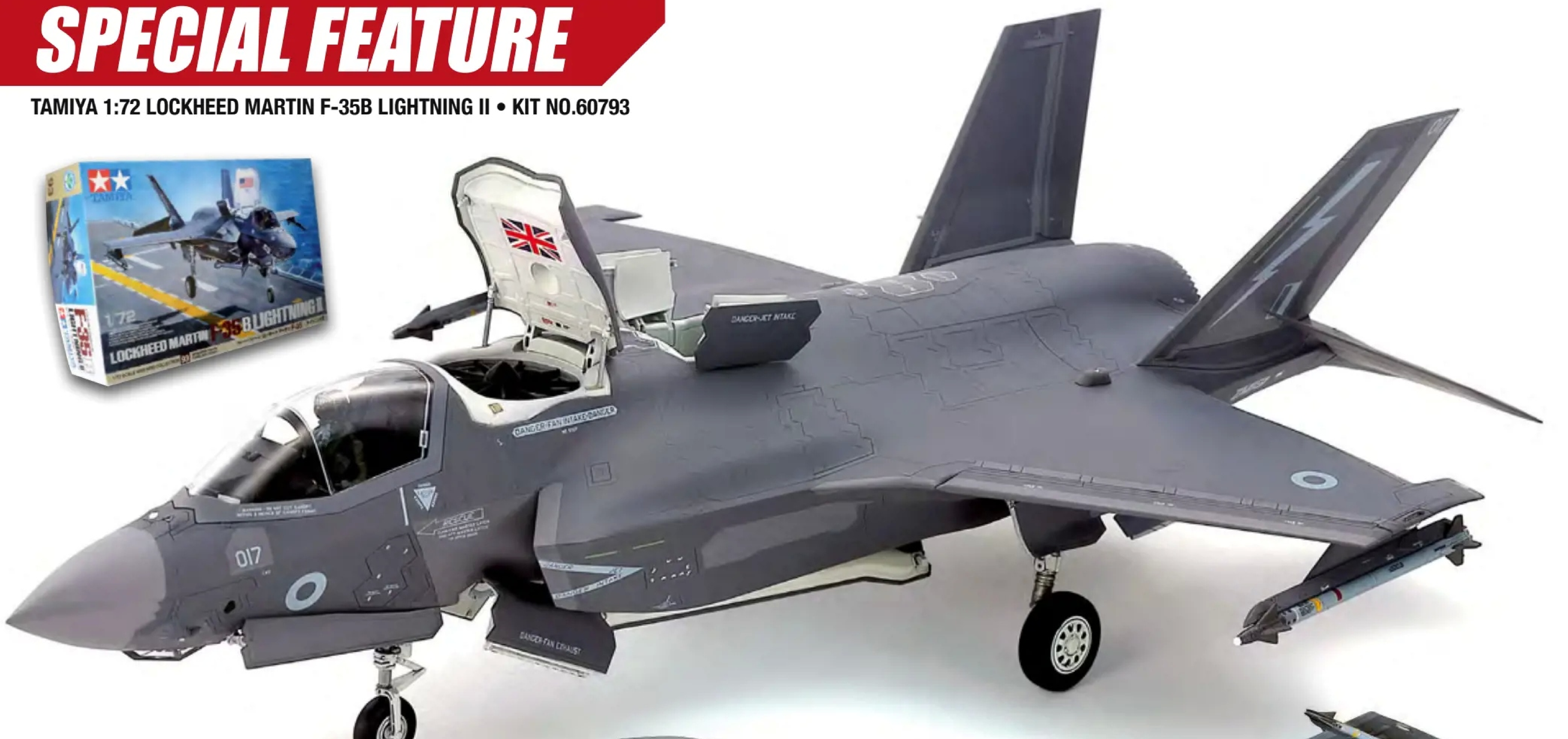
Another feature of the test was a mid-flight transition from the government-provided suite of software to Shield AI's Hivemind autonomy software, which subsequently performed a similar mission profile. This rapid switch aboard the MQ-20 took place without affecting aircraft stability or mission continuity. This demonstrates how standardized reference architectures are streamlining hardware and software integration, even from different vendors.

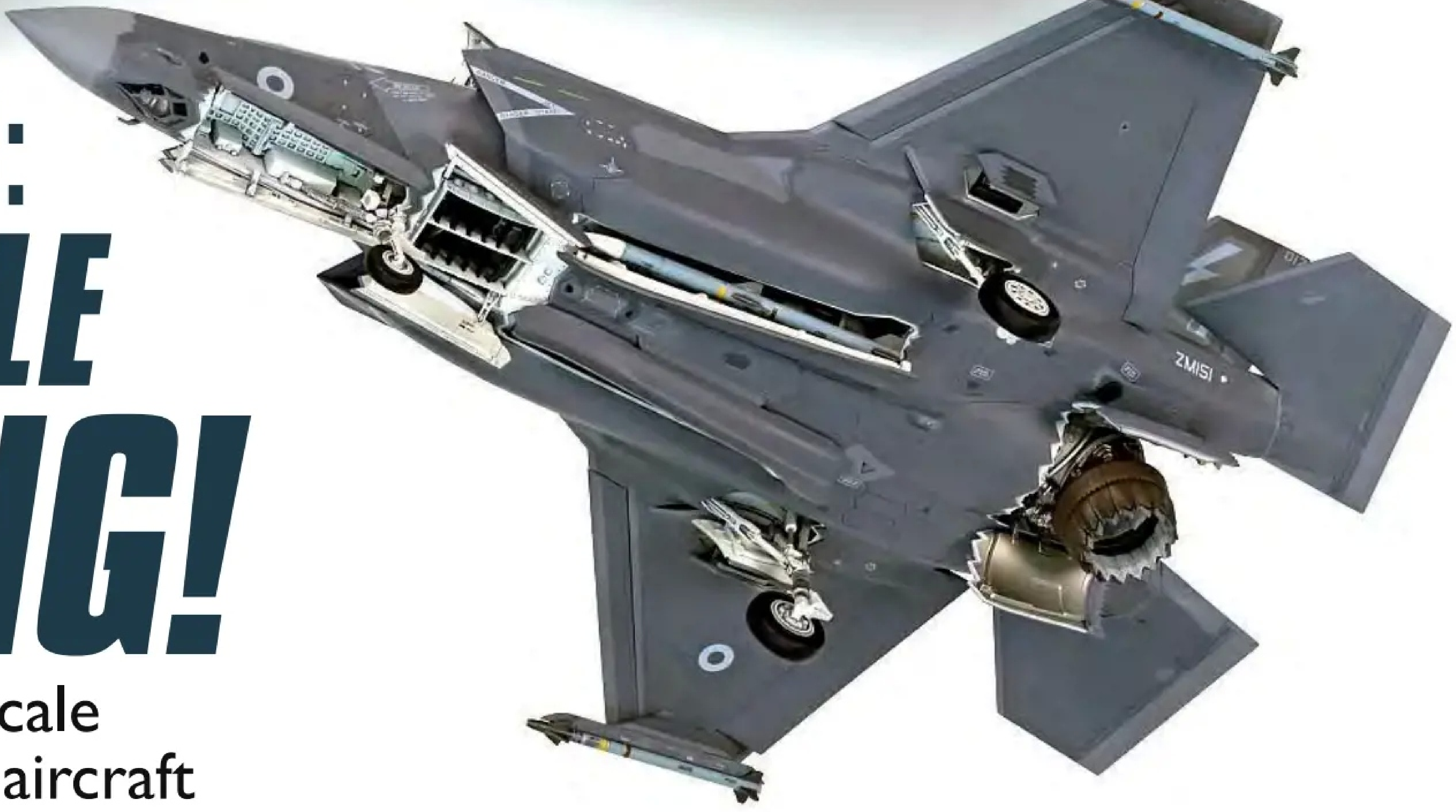
The test offered meaningful implications for the future of autonomy development. By adhering to a shared reference architecture, this model supports a flexible autonomy "app store" concept. It allows the government to incorporate capabilities from a broad vendor ecosystem without being tied to any single supplier. It promotes modularity, supports ongoing innovation, and enables more rapid deployment of autonomy features that align with the speed and agility often seen in commercial software development.

GA-ASI has proven all this over a series of groundbreaking test events. The latest on June 11 underscored the ability of the government's reference architecture to shorten integration timelines, avoid vendor lock-in and enable flexible autonomy solutions that can scale and adapt as mission needs evolve.

For more information, visit ***www.ga-asi.com*** ■

TAMIYA 1:72 LOCKHEED MARTIN F-35B LIGHTNING II • KIT NO.60793





TAMIYA'S 1:72 F-35B: *A LOVELY LITTLE* LIGHTNING!

Tamiya's 1:72 F-35B joins the 'Scale Warbird Collection' of fighting aircraft

The Lockheed Martin F-35B Lightning II is operated by the Royal Air Force's famous 617 Squadron 'Dambusters', United States Marine Corps, Italian Navy, Italian Air Force, Royal Australian Air Force, Belgian Air Force, Japan Air Self-Defence Force, and the Republic of Singapore Air Force. The kit encompasses all the astonishing detail and accuracy of its bigger 1:48 cousin, a model that was featured back in Tamiya Model Magazine Issue 339, January 2024.

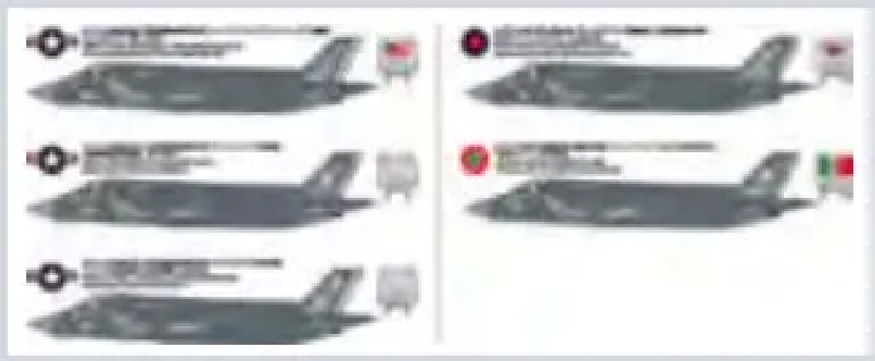
The new version takes in all the design changes for the B-model, most notably that huge intake door behind the cockpit, the inner face of which is often adorned with the flag of the operating nation. Inside that door, Tamiya have recreated an astonishing amount of detail and the same is true of the '3BSM' (3-Bearing Swivel Module) engine exhaust nozzle that can be positioned in the 'hovering' mode. It is covered in amazing detail and just needs some creative paint work to bring it to life.

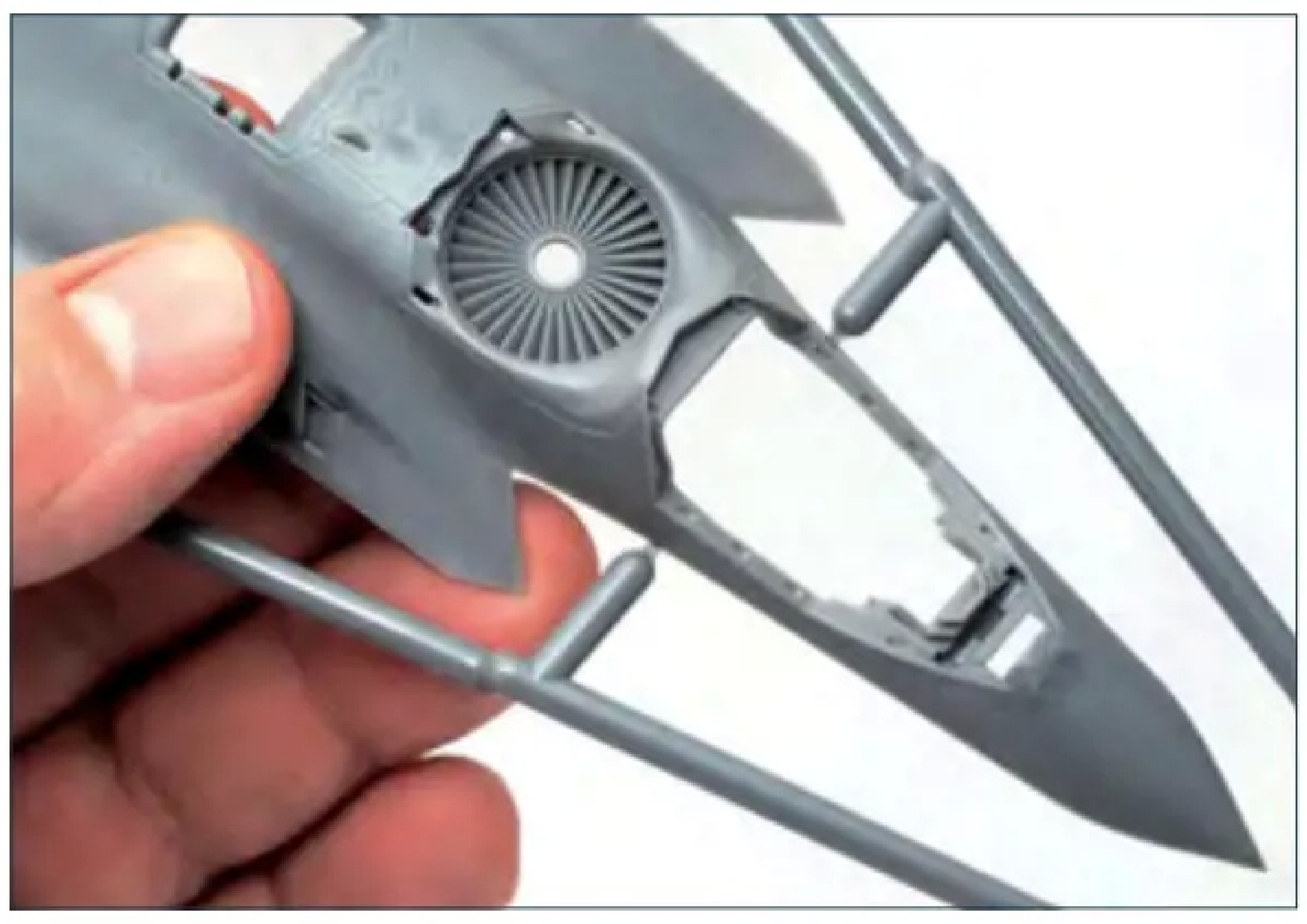
Two modes can be chosen by the modeller: hovering, with open intake door, downward-facing exhaust nozzle, extended undercarriage leg struts and scissor-links, and 'landed' mode, which uses a different set of undercarriage parts in the 'compressed' configuration (with closed scissor-links) to depict the aircraft's weight pressing down on the legs: an important observation by Tamiya's designers. This is another wonderful achievement from Tamiya, and an exquisite replica of this extraordinary fighter and one of the best 1:72 kits ever created. ●

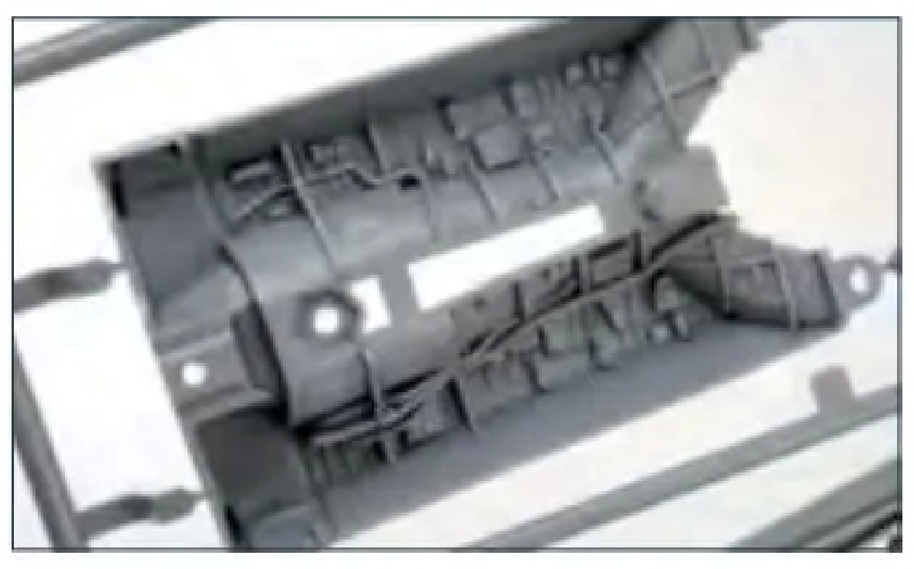
Availability:
Tamiya models, paints, materials and accessories are widely available from good model shops and online. UK import and distribution by The Hobby Company Limited; ***www.hobbyco.net***

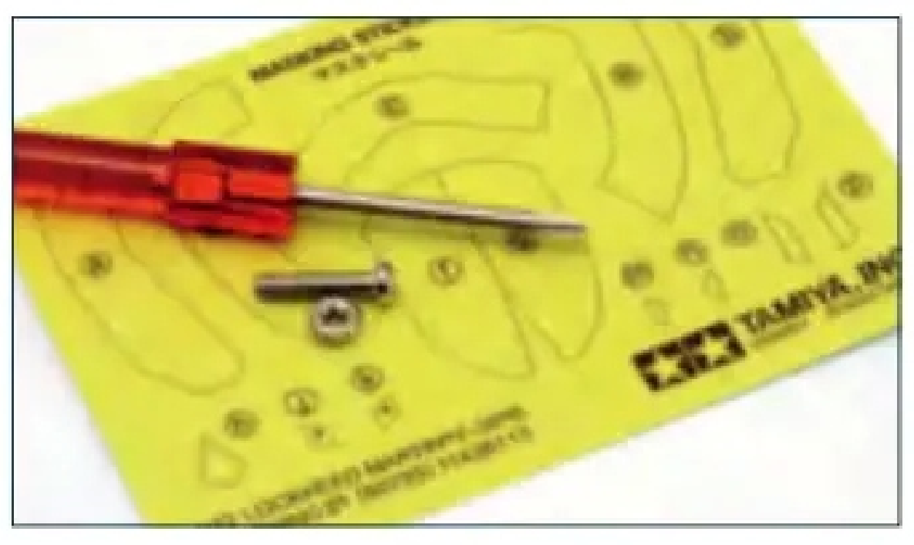
Kit features:

- Wingspan: 148mm
- Fuselage length: 215mm
- Distinctive F-35B design featuring both highly advanced stealth characteristics and STOVL is authentically captured in style, with ergonomic parts breakdown
- The modellers can choose one of two assembly modes: landed or hovering
- Realistic renderings of half-open inner weapon bay doors and interior details such as ribs and pipes
- Lift fan is integrated with nose landing gear bay and the variable vane underneath is recreated in detail
- Shorter than on the F-35A, the engine nozzle is recreated by a single part
- The 3BSM (3-Bearing Swivel Module) is faithfully recreated with a specially designed parts breakdown for this kit
- Y-shaped air intake duct for highly advanced stealth characteristics
- Martin-Baker US16E ejection seat
- RCS (Radar Cross Section) enhancers affixed to top and bottom sections during basic training exercises
- Five marking options from a total of three countries: United States Marine Corps, Royal Air Force, Italian Navy
- Includes painting masks and colour painting guide
- Refined recreation of RAM (Radar Absorbent Material)
- Includes AIM-9X Sidewinder x2, AIM-120C AMRAAM x2









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Our legendary 1/48 Aircraft Series now has all F-35 variants! The F-35A conventional take-off and landing (CTOL) aircraft kit was the first released, and praised for excellent renderings of its form and details such as weapon bays, with unitized interior components for an ergonomic assembly experience. The F-35B short takeoff and vertical landing (STOVL) aircraft kit offers three assembly types: parked, short takeoff and vertical landing.

As the final variant, the F-35C kit depicts the distinctive F-35C form with the largest wings and stabilizers among the F-35 variants. This kit allows a choice of deployed or folded wingtip parts and faithfully recreates F-35C characteristics such as the reinforced nose landing gear with dual tires, rigid main landing gear and retractable fuel probe on the right side of the nose. Why not proceed with creating your own Joint Strike Fighter force in 1/48 scale?

A Hat Trick of Elite Aircraft

《All F-35 variants in the Tamiya line-up!》—1/48 Aircraft Series

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★Images show assembled and painted kits. ★Products may vary from images shown.

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